

How Do Medical Students Navigate Learning Opportunities During Clinical Placements?

**Exploring the inter-related processes underlying medical
students' decisions to engage with learning opportunities in the
workplace.**

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Abstract

Introduction

Workplace learning theories have elaborated the complex interacting influences on student learning on clinical placement. However, the literature insufficiently relates these determinants to the pervasive problem of variable student engagement. Examining student involvement with activity ('engagement') and their agency in the process ('navigation'), requires exploration of the moment-by-moment factors underpinning participation.

Methods

The study followed constructivist grounded theory methodology from a social constructivist perspective. The aim was to develop a conceptual model of the inter-related processes underlying medical students' decisions to engage with learning opportunities during clinical placements. Data was collected through six focus groups and 18 semi-structured interviews utilising a pre-interview questionnaire. The sample comprised 46 third and final year medical students. Analysis followed a constant comparative method.

Results

Student engagement with clinical activity is underpinned by a complex interaction of individual, social and environmental influences. Individual factors included affective state, motivational drivers, prior experience and existing traits, values and beliefs. Complex relational dynamics both supported and inhibited learning, with the students demonstrating reliance on external mediation. Pertinent environmental influences included the physical space, clinical activity dynamics and students' personal lives. These interacting factors translated to behavioural norms, evident in students' highly selective and strategic interactions.

Discussion

The novel conceptual model developed is the first of its kind and draws together known and previously unknown influences of medical student engagement with clinical placements. Where the existing literature over-emphasises formal learning processes, this study suggests student engagement with workplace

learning opportunities is determined by a complex interaction of explicit and implicit factors which are dynamic, reactive and contextually dependent. The model sits in accordance with Billet's learning theory of workplace affordances which provides a useful theoretical framework for interpreting the findings.

Conclusion

This study is unique in establishing a model of the inter-related processes determining medical student engagement with learning on clinical placements. Understanding the interacting network of individual, social and environmental influences of student participation provides educators with valuable insight into modifiable factors which may support student learning.

Dedication

To Dad, my greatest champion. You sadly did not get to see this work to completion, but you have been with me in my heart to the end of this journey. I dedicate this work to you, with the steadfast knowledge that you would have been the proudest of anyone to put a copy of it in pride of place on your bookshelf.

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Definition of Key Terms

Workplace: With regards to medical student learning, the definition of workplace in this study is an adaptation of Dornan's 'a place where students, doctors and patients come together in the conjoint pursuit of clinical care and learning' (Dornan, 2009). In this study 'doctors' are substituted by 'health professionals', taking into account the importance of medical student learning from non-medical practitioners and the modernisation of healthcare delivery with a diverse workforce leading clinical care (Burford et al., 2013, Coombes, 2009). 'Health professionals' are defined by the International Standard Classification of Occupations sub major group 22. According to this classification health professionals are those who conduct research; improve or develop concepts, theories and operational methods; and apply scientific knowledge relating to medicine, nursing, dentistry, veterinary medicine, pharmacy, and promotion of health. The sub-groups of the larger category are medical doctors, nursing and midwifery professionals, traditional and complementary medicine professionals, paramedical practitioners, veterinarians and 'other health professionals' (including addiction counsellors, biomedical engineers, clinical psychologists and medical physicists) (International Labour Organisation, 2019). Therefore, according to this investigation, the workplace is defined as 'a place where students, health professionals and patients come together in the conjoint pursuit of clinical care and learning.' Workplaces include but are not limited to out-patient clinics, hospital wards, primary care surgeries, operating theatres, emergency departments, laboratories and centres promoting or providing care within the community.

Clinical placement: Describes where students are present for educational purposes in an environment which provides healthcare or related services to patients (General Medical Council, 2022).

Learning opportunities: Are considered to be a set of circumstances where a medical student has the opportunity to participate in clinical practice (Lave and Wenger, 1991). They may be activities organised specifically to provide educational opportunity or occasions of 'informal' learning where a medical

student is engaged in an activity without conscious attempts to learn (Eraut, 2010a).

Decision making processes: This study considers that decision making involves both conscious explicit deliberative thinking processes and implicit and intuitive 'unconscious' decision-making processes (Eraut, 2010a, Keyers, 2008). Decision making is not considered to be a linear cognitive exercise, but rather the inter-related processes underlying a course of action in direct relation to the socio-cultural context (Donald, 2008).

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1. Chapter 1 – Thesis Orientation

1.1 Introduction

1.1.1 Clinical placements, clinical clerkships and medical curricula

Where patient care lies at the heart of clinical practice, clinical placements are arguably the cornerstone of medical student education (General Medical Council, 2022, Morgenstern et al., 2021). Medical students spend a significant proportion of their time in clinical environments under the auspices of clinical providers both in hospitals and in community and social settings (Tai et al., 2017, General Medical Council, 2022). Short clinical placements typically commence in the first couple of years of a medical programme transitioning to more intensive and longer experiences in the latter half of the programme (Dornan et al., 2014, Yardley et al., 2010, Dornan et al., 2006). These periods of time are referred to as ‘rotations’, ‘placements’, ‘clerkships’ or ‘internships’ depending on the geographical location (Morgenstern et al., 2021, Dornan et al., 2014). Organisation and structure of these placements vary, with increasingly creative models of placement design and duration (Nyoni et al., 2021, Fuller et al., 2021). The original ‘traditional block based’ model of clinical placements where students are allocated to a specific clinical environment for a period of days to weeks remains pervasive (Fuller et al., 2021, Nyoni et al., 2021, Walters et al., 2012). However, longer, more community focused, and apprenticeship style placements are now commonplace, for example ‘Longitudinal Integrated Clerkships’, where ‘longitudinal’ applies to a longer term placement of up to a year and ‘integrated’ describes continuous and concurrent community and hospital clinical experiences for each learner (Fuller et al., 2021, Hudson et al., 2017). Where students on clinical placements were historically somewhat at arm’s length from medical schools, in recent years there has been increasingly sophisticated integration between school and clinical placement providers (General Medical Council, 2022, Stoffels et al., 2023). This is manifest in regulatory structures and in personnel roles, where full time teaching roles based in clinical environments (‘teaching fellows’) have become prolific (Couchman et al., 2022, Baryeh, 2022), and the duties of placement or clerkship directors are evermore structured (Morgenstern et al., 2021).

1.1.2 Delivery of undergraduate medical education in the UK

Considering clinical placement regulation in the UK, the structure and management of clinical placements is under the governance of the General Medical Council (GMC). Key policy documents produced in the last 15 years are increasingly comprehensive in detailing how placements should be organised and run (General Medical Council, 2011, General Medical Council, 2018a, General Medical Council, 2009, General Medical Council, 2022). For example, in 2009 it was mandated that medical schools offer at least one ‘student assistantship’ during which the student acts as an assistant to a junior doctor and undertakes supervised clinical duties (General Medical Council, 2009). Medical schools are also required to ensure that students are provided with practical experience working with patients in all years of the curriculum and that they undergo a sufficient number and range of clinical placements to meet specific learning outcomes, the ‘outcomes for graduates’ and ‘practical skills and procedures’. (General Medical Council, 2018b, General Medical Council, 2023). In later iterations, some GMC policy elements could be viewed as bordering on aspirational/infeasible and there appears to be an extant implementation gap between standards and commonly experienced practice. For example, the 2022 guidance states, “Clinical teams should always involve students in all clinical activities and observations” (page 25) (General Medical Council, 2022). Notably, the active guidance at the time of this study includes the following stipulations (General Medical Council, 2018a):

- Students should be aware of the learning objectives for each placement and be adequately prepared to meet these.
- Induction should include physical orientation with the setting, briefings on local protocols and rules, introduction of the student to relevant staff members, access to record and IT systems.
- Students should have a named and trained clinical supervisor who is a consultant or GP fully registered who takes overall responsibility for their care. F1 or F2 doctors can oversee simple tasks but should not have overall responsibility for students.

- All professionals responsible for ‘supervising, coaching or overseeing’ medical students should be trained, supported and briefed in carrying out this role.
- Medical students should be monitored at all times.

1.1.3 On the horizon – changes to delivery of UK undergraduate medical education

Upcoming and recent changes to the delivery of UK undergraduate medical education reinforce the imperative for optimising student learning on clinical placements. The Medical Licensing Assessment (MLA) is a nation-wide assessment that all medical students graduating in 2024-2025 will be required to pass prior to graduation. It combines a knowledge test and clinical and professional skills assessment which is designed to reflect ‘real-life, day-to-day medical practice.’ It is intended to ensure that all UK graduates reach a threshold of safe practice (General Medical Council, 2024b). At the time of writing, it has not yet been completed by any student, but has been on the horizon for UK medical school curricula for several years and is likely to be an ongoing focal point for how students are prepared for practice (General Medical Council, 2024b, Khogali and Lynch, 2023, Sharma and Alsaffarini, 2020).

Another significant shift in the clinical placement policy landscape is the political resolution to increase the number of UK medical students. Medical student numbers have steadily increased following the turn of the millennium, with the cap on student numbers increased by 2000 since 2013 (Lewis, 2023, Bolton et al., 2023). However, total student numbers remain significantly below the level needed to achieve self-sufficiency in meeting UK staffing requirements (Medical Schools Council, 2021). Recognising an ongoing staffing crisis and the drive from key stakeholders including the Medical Schools Council, the current UK government has pledged to increase the cap on medical student numbers from 9500 to 15000 (Medical Schools Council, 2021, Lewis, 2023). A recognised key challenge to this change in policy is managing the capacity of clinical spaces to support significantly increased student numbers (Medical Schools Council, 2021). Although the proposal is for new medical schools to be planned according to geographical capacity and need, increasing competition for space in clinical

areas is likely unavoidable and a key limiting factor of this initiative (Medical Schools Council, 2021, Lewis, 2023). Indeed, at the locale of this study, a new regional medical school opened as part of this policy movement, and the pressure on existing clinical placements and competition amongst students was manifesting shortly after the culmination of this investigation (Volpe, 2021).

1.1.4 Local delivery of local/national curriculum

The research was conducted at a regional NHS Trust in the North of England, United Kingdom, which delivered a five or six year medical programme consistent with GMC principles. This was also the place of work of the principal investigator who worked at the study site as a Teaching Research Fellow. A detailed account of the study setting, and the principal investigator's role is provided in Chapter 3, section 3.7.

1.2 Study origins

The investigation was conceived by the principal investigator and was borne out of their experiences as a medical student and as an early career clinical educator. That medical students engage very differently with clinical placements was both a personal experience and an educational observation. Moreover, from both anecdotal discussions in medical education fora and from the medical literature, this phenomenon appeared pervasive, widespread and poorly understood. As such, this became the subject for this enquiry. From the outset it was intended that this research would have far-reaching practical implications for how best to support student learning on clinical placements, though this was not a specific area of research focus.

1.3 Aim of study

The overall aim of the study is as follows: To develop a conceptual model of the inter-related processes underlying medical students' decisions to engage with learning opportunities during clinical placements.

1.4 Changing Landscape – COVID-19 pandemic

1.4.1 *Outbreaks, lockdowns and intersection with the study*

The first phase of data collection for the study involving 5th year students began in January 2020 and ended in March 2020. The implications of the COVID-19 pandemic were becoming known in Europe during this time period (Walker et al., 2022). On the 16th March 2020 all medical student placements for years 1-4 at the study site were cancelled, and the summative 'Final' 5th year examinations were cancelled. Teaching and placements were continuing for fifth year students but with significant uncertainty around the future. Fifth year student placements were ultimately cancelled on 27th March and the students graduated early with the option of entering into clinical service earlier than planned. Furthermore, a national UK lockdown was announced on the 23rd March 2020 which limited non-essential travel (Walker et al., 2022). Emergency measures were put in place to switch to remote methods to complete the first phase of the study. The investigation was subsequently paused for 2 months and was redesigned to accommodate infection-control procedures, with contingency measures.

A second wave of the pandemic emerged in the UK in Autumn 2020. A local lockdown was imposed in the North-East of England on the 17th September 2020 (Wainwright, 2020). This escalated to a further national lockdown on the 5th November 2020 (Walker et al., 2022). These lockdowns coincided with recruitment and data collection with medical students in the second phase of data collection, though recruitment was able to take place face-to-face. A final third national lockdown was imposed from 6th January 2021 until 3rd March 2021 (Walker et al., 2022). This corresponded with the third phase of the study. Measures to manage COVID-19 were in place in hospitals during the second and third phase of the study. Medical student placements continued, but students experienced some disruption to their studies for example restriction in participation in certain clinical areas/with certain patients. The timeline of these changes is summarised in the Figure 1 below:

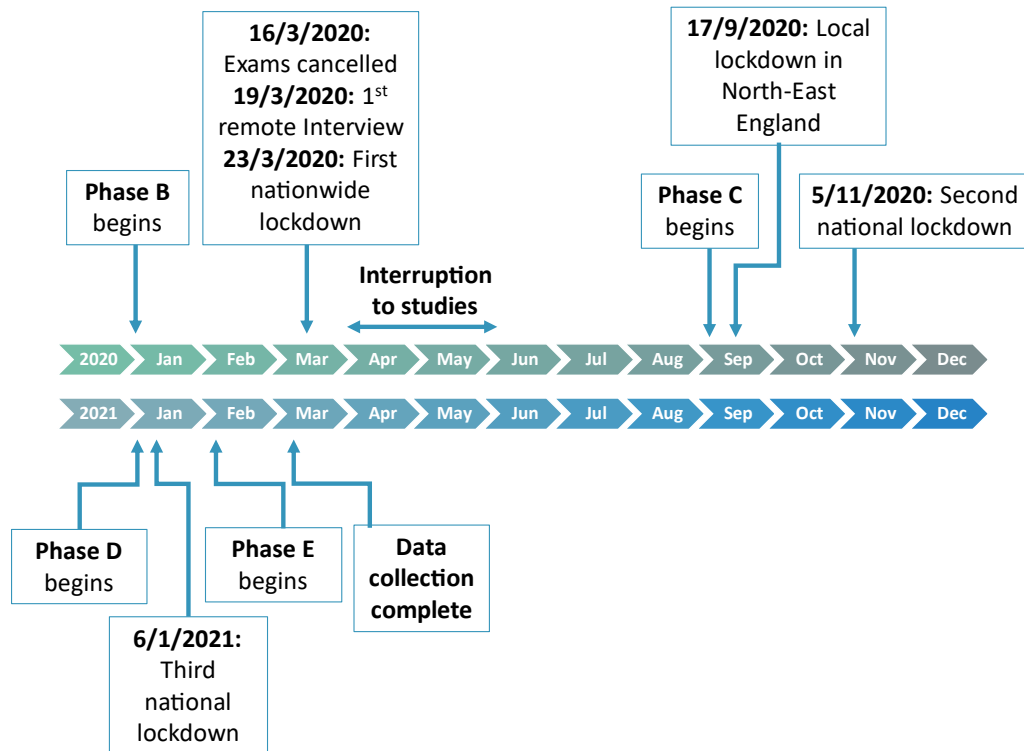


Figure 1. COVID-19 and timeline of interactions with study

1.4.2 Consequences of the COVID-19 pandemic to the investigation

Although steps were taken to mitigate the impact of the COVID-19 pandemic as far as possible, the following consequences are considered to have arisen from the disruption:

- Retention of participants: There was a high drop-out rate from the study during the first phase of data collection where the study sample of 5th year medical students contended with significant disruption to their studies and participants required to shift to remote methods at short notice.
- Recruitment of participants: At the height of national lockdowns, recruitment into the study was notably lower, particularly impacting the third phase of the study. This may have been a consequence of a need to switch to remote methods for recruitment at these time points, and may also reflect a change in willingness for students to participate in research at these times of disruption.
- COVID-19 as a contextual dynamic: Medical students undoubtedly experienced differences during their clinical placement experiences as a

result of the pandemic. However, several measures were taken in the study design to reflexively take account of these differences and examine these parallel to the study phenomenon.

Further detail of how the study design was amended to accommodate COVID-19 and the impact on retention and recruitment of participants is included in Chapter 3, and Appendix B.

1.5 Conclusion

Clinical placements lie at the cornerstone of medical school programmes of learning. The requirements and demands on placements within UK medical programmes are ever increasing, particularly with the advent of the Medical Licensing Assessment and significantly increased student numbers. As a corollary to these substantial policy shifts, medical educators are looking for creative means to enhance medical student experiences on clinical placement. As medical schools invest in longer, more frequent and diverse clinical placements, this investigation is timely in addressing how students learn in these contexts and how learning is supported. Furthermore, in conjunction with this policy backdrop, this study was conducted at the peak of the COVID-19 pandemic, and the implications for this with respect to the implementation and results of this study are introduced.

1.6 Chapter-by-chapter overview

This thesis begins in Chapter 2 with a description of the current understanding of medical student learning during clinical placements with respect to models of workplace learning and the current medical literature. The latter will be both synthesised and critiqued. The deficiencies in the literature in relation to this investigation are also described.

Chapter 3 presents the ontology, epistemology and methodology for the study. Additionally, it outlines a brief overview of the study design and methods. These are explored in more detail in conjunction with the presentation of findings in the specific chapters dedicated for each phase of the study.

Chapters 4, 5, 6, 7 and 8 present the findings from the data generation phases of the study. The methods and rationale for each phase are described in conjunction

with the results. Discursive elements are written concurrently with the findings, contextualising and critiquing them with respect to the medical literature.

Chapters 4, 5 and 6 describe the phase of the investigation which involved interviews and a pre-interview questionnaire with final year medical students.

Chapter 7 describes focus groups which were undertaken with third and final year medical students. Chapter 8 describes member-reflexive focus groups conducted with final year medical students.

Chapter 9 presents the overarching conceptual model of the inter-related processes underlying medical student engagement with learning opportunities. A summary of findings in Chapters 4, 5, 6, 7 and 8 is presented in relation to the model. Further pertinent discussion with respect to the medical literature is undertaken. The final conceptual model is also related to existing workplace and educational theory.

Chapter 10 describes the recommendations for practice and future research. This includes practical suggestions for supporting medical student learning during clinical placements.

Chapter 11 provides a short summary and conclusion of the entire thesis, its contribution and implications for the field of medical education.

Chapter 12 describes the impact of the investigation so far and outlines further plans for dissemination of the findings.

2. Chapter 2 – Medical Student Learning During Clinical Placements

2.1 Introduction

This chapter introduces the current conceptual understanding of how medical students learn during clinical placements. It will start with a discursive analysis of models of workplace-based learning and how these relate to the study context. It will then go on to provide an in-depth analysis and critique of key works addressing medical student learning in clinical environments, revealing how this thesis relates to the current literature. Subsequently, a synthesis of the current literature on medical student learning on clinical placements will be presented, according to a literature review conducted during this investigation (see methods section). Key areas of discussion include the medical student's role, experience and values when learning on placement as well as the contextual features of clinical environments which influence learning. Finally, the concepts of the hidden curriculum, self-directed and self-regulated learning and peer and near-peer learning will be interrogated with respect to the study phenomenon.

2.2 Models of learning in the workplace

2.2.1 Introduction: workplace learning and situated learning

“Learning is not something that requires time out from productive activity, learning is at the heart of productive activity” (Zuboff, 1988)
page 395

Although medical students are not ‘workers’ in clinical environments, they are learning in the location where they will apply the outcomes of learning. This is the traditional understanding of ‘situated’ learning (Billet, 1996) and as such, anchors ‘learning on clinical placement’ within the theoretical sphere of ‘workplace learning’. However, this thesis takes the perspective that learning does not occur as a separate entity within practice activity. Adopting the ‘situated learning’ theory of Lave and Wenger, individuals do not ‘receive’ knowledge about the world or an activity in it, rather the individual, the world and activity are created through their mutual interaction with each other (Lave and Wenger, 1991). Therefore, learning

is not a circumscribed characteristic within social practice, but embedded and embodied through the connection between person, activities, knowing and the world (Lave and Wenger, 1991). A way of distinguishing between popular workplace learning theories, is how these elements are connected and the relative emphasis placed on individuals, the activity or experience and the social-cultural context. The following is a selection of key theories considered most applicable to the research stance and question.

2.2.2 Legitimate Peripheral Participation and Communities of Practice

Firstly, focusing on the socio-cultural context for learning, the defining characteristic of Lave and Wenger's theory of 'situated learning' is the process of 'legitimate peripheral participation' (LPP) with 'communities of practice (Lave and Wenger, 1991). The latter constitutes groups of people who learn and progress in a practice by engaging regularly in it together (Wenger, 1998). Newcomers inevitably learn as they transition through a position on the periphery of a group to fully adopted members as they demonstrate increased competence and mastery (Lave and Wenger, 1991, Wenger, 1998). LPP adopts the perspective of learning as a social theory, encompassing the inter-related facets of 'doing,' 'becoming,' 'experience' and 'belonging.' 'Doing' relates to workplace practice and the structures that individuals engage with and how these are perceived. 'Becoming' relates to how identity evolves through transformative processes of participation in a community. 'Experience' describes how individuals create meaning from engagement. Finally, 'belonging' relates to integration in a social group through demonstrating competence that leads to participation (Wenger, 1998). A key facet of this theory is that learning need not be intentional and can occur without agency or purpose from the learner through social participation alone (Lave and Wenger, 1991, Wenger, 1998).

2.2.3 Informal and non-formal learning

Opposing this perspective are theories of informal learning or non-formal learning which adopt a more cognitive slant. Here, the role of the individual is emphasised, particularly how learners identify, experience and evaluate opportunities within social practice (Ellstrom, 2011). However, rather than

focusing on learning through organised processes, non-formal learning or informal learning addresses learning where this is not the primary objective of activity (Ellstrom, 2011, Eraut, 2000). An application during clinical placement would be a medical student learning from engaging in a workplace activity such as the ward round rather than formal planned teaching such as a bedside tutorial. Within educational spheres, this informal aspect of learning has traditionally been neglected (Coffield, 2000, Dornan et al., 2007). However, Eraut's body of work has progressed the understanding of the concept, particularly through the proposed typology of non-formal learning (Eraut, 2000). This stratifies non-formal learning according to the degree of consciousness of learning; the intention to engage in learning and how these facets intersect with time and memory. Three classifications are provided ranging from 'implicit' learning where new experiences are unconsciously related to past memories without awareness; 'reactive' learning where there is rapid near-spontaneous reflection and recognition of current learning and 'deliberative' learning where learners review past experiences, actively engage in current learning on a higher level and plan for future learning opportunities (Eraut, 2000).

2.2.4 Experience-Based Learning (ExBL)

Whilst incorporating elements of situated learning, LPP and informal learning, Dornan's pedagogy of 'Experience-based learning' (ExBL), focuses on the nature and determinants of learners' experiences (Dornan et al., 2019, Dornan et al., 2007). Conceptualised through the 'SPaRC' model, medical student learning is understood as a process of 'Supported Participation, Real patient learning and Capability' (Dornan et al., 2019). The social, organisational and affective support offered to individuals is related to the nature of student engagement in activity, how they reflect on experiences with patients and their transition into professionals through their evolving professional identity and by demonstrating competence (Dornan et al., 2019). The latter draws parallels to 'mastery' in LPP, (Lave and Wenger, 1991) whereas 'reflective processes' relate to informal learning (Eraut, 2000). Furthermore, intrinsic to the overall model is the tenet that learning is best achieved through students 'stepping out of their comfort zones', without being overwhelmed (Dornan et al., 2019). This echoes the Vygotsky's

psychological theory of the 'zone of proximal development', which occupies the space between what a child can do and what they are capable of, delineating the skills that can be achieved through social support and guidance (Vygotsky, 1978). The latter external input has been further conceptualised as 'scaffolding' learning, which can be paralleled to the 'support' in the ExBL SPaRC model (Dornan et al., 2019, Wood et al., 1976).

2.2.5 Workplace affordances

Finally, the workplace learning theory most aligned with this thesis is Billet's conceptualisation of workplace affordances (Billet, 2001). This theory captures the synergy between social practices and individual agency in workplace learning, whilst recognising the importance of participatory experience (Billet, 2011). It rejects Lave and Wenger's tenet that learning occurs inevitably through workplace practice (Lave and Wenger, 1991). Instead, it recognises that learning is effortful, shaped by individual agency and requires intentional engagement with activity and the associated social interactions (Billet, 1996, Billet, 2001). However, individual participation with practice is also determined by workplace 'affordances' which conceptualise the degree to which individuals are invited to learn and engage in activity. 'Affordances' include the nature of the tasks and goals as part of workplace norms and practices as well as complex social dynamics and power relations which support inclusion or foster exclusion (Billet, 2011, Billet, 2001). As such, learning opportunities are created and shaped through the interaction of affordances and the characteristics of student participation. The latter are dependent on individuals' personal histories (or 'ontogenies') and their intentionality (Billet, 2001, Billett, 2002).

2.2.6 Conclusion

Medical student learning during clinical placements is theoretically underpinned by the social and psychological literature addressing workplace learning. The role of social participatory practices is best conceptualised by the theory of legitimate peripheral participation, whereas theories of informal learning are a window into the cognitive perspective. Experience-based learning incorporates multiple aspects of the latter as well as drawing on other popular educational theories in

order to provide a model of workplace learning specific to medical students in the clinical context. Billet's theory of workplace affordances is considered the most aligned with the conceptual model developed through this investigation, and accordingly will be discussed in more detail in the overall Discussion in Chapter 9.

2.3 Introducing key works of student learning in the workplace

2.3.1 Introduction

Four key studies address how medical students interact and engage with clinical placements with sufficient quality and depth. The findings share some common themes albeit using different language to conceptualise ideas. A shared deficiency, with respect to the research objectives of this investigation, is how the underlying 'decision making processes' influencing engagement are described. Methodological limitations of these studies also limit interpretation of the findings. The following discourse will summarise the key findings, and then describe the limits of what can be understood with respect to the data collection methods.

2.3.2 Experienced-based learning

In 2007 Dornan undertook a qualitative study of medical student learning during clinical placements using a partial grounded theory approach (Dornan et al., 2007). The stated aim was to develop a model linking the processes and outcomes of workplace learning. The source of data was from semi-structured group discussions with three student groups, one of which was under supervision by the author and subjected to an intervention to improve clinical learning. Dornan's analysis centres around the concept that the principal and 'best' process of learning in the workplace is through 'supported participation.' Participation is conceptualised as 'observation' which can be passive or active, and 'acting.' The latter ranges from 'rehearsal' of tasks already completed, to 'contribution' where participation makes a difference to patient care. The context for and outcomes of supported participation are included in the final model. Important contextual features are 'human interactions' and 'curriculum factors' which are described in more detail in the following section addressing the contextual determinants of learning. The 'outcome' of supported participation is

the development of practical competence and positive state of mind in the student. The latter includes a sense of reward, improved confidence, evolving professional identity and increased motivation which in turn influences supported participation (Dornan et al., 2007).

Limitations of this study are the population sample which was confined to one medical school and where one-third of the participants were also subject to an educational intervention by the author. This may influence the transferability of the findings. Furthermore, the method of using 'group discussions' could have failed to adequately capture the individual perspective, particularly regarding more sensitive issues such as emotional experience. The presence of the lead author in discussions may have further censored responses or led to biased reporting given his supervisory role (Dornan et al., 2007).

2.3.3 Ethnographic observation of medical student learning on placement

Hagg-Martinell et al conducted a more recent investigation into medical student learning on clinical placement, through undertaking an ethnographic study of medical students' opportunities to participate and learn in an internal medicine ward in Sweden, from a socio-cultural perspective (Hagg-Martinell et al., 2017). Data collection was through 27 observations (of approximately 3-4 hours) and 15 informal 'conversations' with students undertaking an early clerkship in 2011-2013. The two principal themes that emerged were 'nervousness and curiosity' and 'invited and involved.' When first arriving on the ward, students are described as feeling uneasy or tense, particularly when undergoing questioning by supervisors. Those who were observed over time transitioned from nervousness to curiosity to learn. However, these expressions of curiosity were sometimes ignored leading to missed learning opportunities. Consistent with Dornan's concept of 'supported participation' (Dornan et al., 2007), the author observed that to be involved in the community (and therefore have access to learning opportunities), the students had to be 'invited' by another member of the community. In particular, the degree of their medical supervisors' 'invitation' to participate directly influenced involvement. The dialogue between the student and clinician was important in establishing the 'invitation' (Hagg-Martinell et al., 2017).

Limitations of this study include the focus on one clinical environment and the timeliness of data collected over a decade ago, potentially limiting its relevance and transferability. The study also conducted a relatively limited number of 'conversations' and the nature of these were not described in detail. Moreover, where observation can provide insight into external, visible influences of learning, it perhaps cannot unlock the students' personal internal experiences of critical importance to learning.

2.3.4 Multi-site observational study of medical student learning

Liljedahl conducted a more recent observational study of medical student learning during clinical placement which had the benefit of spanning 3 hospital sites and 3 different placement types in Stockholm (Liljedahl et al., 2017). Ten 'purposely selected' medical students from three year groups were observed for a total of 70 hours. Interviews were conducted with a convenience sample of four medical students, three supervisors and one clinical manager who consented to this. The key themes of the study were that students adopted a marginal status in the community, were selective in the activities they engaged with, and navigated complexity by being 'easy going' (Liljedahl et al., 2017). The details of the findings are explored in more detail in the subsequent synthesis in the rest of this chapter. Interestingly, Liljedahl later re-analysed the initial data set exploring the contrast between nursing and medical student experiences of learning in clinical practice, which re-conceptualises medical students as 'tourists' who selectively engage with opportunities with no expectation of contributing meaningfully to practice (Liljedahl et al., 2023).

Again, like Hagg-Martinell (Hagg-Martinell et al., 2017), this study is limited due to focus on observation without comprehensive interview data to support understanding of student perspectives and internal dialogues. However, Liljedahl additionally approaches the study from the unique stance as a medical student concurrently completing a PhD (Liljedahl et al., 2017). Balancing the dual role of being an 'insider' as a medical student and the need for reflexivity as a research student undoubtedly has its challenges (Watling and Lingard, 2012). Importantly, the study participants were purported not to have a prior relationship with the investigator which may have limited bias in addition to the reflexive processes

described by the author (Olmos-Vega et al., 2022, Liljedahl et al., 2017). However, as per her own admission, another potential difficulty would be for Liljedahl to make interpretations beyond the traditional 'outsider' perspective medical students have during clinical work (Liljedahl et al., 2017). A recent opinion piece about medical students' experience of clinical placements provides a possible example of a student perspective on learning in clinical practice, which is at odds with current expert perspectives on workplace learning (Webster et al., 2019, Billet, 2001, Illeris, 2003). Arguably, you can see a subtle shift in Liljedahl's perspective on student learning in her later re-analysis a decade later (Liljedahl et al., 2023).

2.3.5 Case study analysis of medical student learning in primary care

Focusing on experiential learning in the primary care context, Pearson and Lucas explored clinical learning of health professionals and medical students in a GP practice using a 'case-study' methodology (Pearson and Lucas, 2011). Methods included individual interviews, focus groups, documentary analysis and indirect and direct observation. The responses from medical students are considered jointly with those of other health professionals. The model Pearson uses to describe clinical learning is that of 'engagement' and 'opportunity.' Facets of engagement include recognition (for example being seen and welcomed), respect (both for the quality of care provided and between professionals), relevance (to curriculum and expectations) and emotion ('challenge,' 'enthusiasm' and 'exceeding expectations'). The learning opportunities are described in terms of meaningful interactions with patients, peers and professional colleagues.

This study benefits from a multi-modal strategy of data collection, examining the study phenomenon from different vantage points. However, the theoretical model risks over-generalising the complexity of the findings, and certain themes are poorly constructed. For example, the category of 'respect' does not distinguish between the respect for the quality of care provided by the institution, respect for the quality of education nor the respect individuals share with each-other. 'Emotion' is another under-developed theme which, in the authors' words 'link(s) a variety of ideas' but is described only in terms of 'challenge' and tutor enthusiasm stimulating learning. This study is also limited in its relevance to the

study phenomenon, as it did not perform sub-analysis of medical students as an isolated cohort (Pearson and Lucas, 2011).

2.3.6 Conclusion

These four key studies provide a foundational understanding of how to conceptualise medical student learning on clinical placements. However, with respect to the study phenomenon, methodological and analytical limitations fall short of providing an in-depth understanding of medical students' individual perspectives on learning during clinical placements, and the factors which may be influencing them moment-by-moment with respect to engaging with opportunities. Building upon these research studies, the following synthesis presents the remaining recent literature addressing medical student learning on clinical placement organised into key themes.

2.4 The medical student's role and experience and values when learning on placements

2.4.1 Introduction

From the vantage of the medical student, experiences on clinical placements are intricately linked to the role they adopt. This in turn is influenced by what they perceive is valuable with respect to learning on clinical placement and can influence behaviour. Furthermore, emotional experiences are a significant determinant of engagement. These aforementioned dimensions will be explored in the following section.

2.4.2 Value of opportunities

Diary and log-book studies have attempted to de-construct learning opportunities during clinical placements by describing discrete clinical activities, opportunities or competencies (Burford et al., 2015, Daelmans et al., 2004, van der Hem-Stokroos et al., 2003). Across the literature, students expressed a broad range of perspectives on these specific opportunities available to them, and how these were valued (Homberg et al., 2023, van der Hem-Stokroos et al., 2003, van der Zwet et al., 2011, Salminen et al., 2016, Tanna et al., 2020). Some expressed

preferences lack detail due to the nature of data collection utilising simple evaluative tools. However, some value judgements around specific activities are better understood. For example, the 'ward round' was the least valued activity in some studies (Young et al., 2009, Remmen et al., 2000). Beliefs around this activity ranged from them being experiences which were 'interesting', (Zhao et al., 2019), of limited benefit to learning (Kandiah, 2017, Marz et al., 2021), worthless (Collett et al., 2022) and passive experiences (Marz et al., 2021). The danger of taking these judgements at face value is the lack of contextual understanding or appreciation of the underlying determinants student value judgements are derived from. For example, Collett et al's study elaborates that ward rounds are viewed as activities with high potential for learning, but how students engage with them is dependent on the team (Collett et al., 2022). Jaye et al highlight that students experience exclusion from ward rounds, and perceive that the emphasis is on clinical care rather than teaching or learning (Jaye et al., 2009).

Another domain where students expressed opposing beliefs was that of clinical documentation. Some students considered writing medical notes contributed to their learning (van der Hem-Stokroos et al., 2003) whereas others perceived this kind of task to be uninstrutive, boring or menial (Yeh et al., 2020, Remmen et al., 2000). Moreover, student perspectives on the value of tasks and activities are not always shared by those in the workplace or indeed educators (Carter et al., 2021, Quillin et al., 2013, Irani et al., 2010). For example, Bowker et al's interesting study emphasises the role documentation plays in supporting reflection and identification of knowledge gaps (Bowker et al., 2023).

The students also expressed judgements and expectations of what they expected or preferred in interacting with other staff members as part of teaching and learning. They were generally negative about 'observing' clinical activity (van der Hem-Stokroos et al., 2003, Lyon, 2004), whereas, actively getting 'scrubbed in' in theatre environments was highly valued (van der Hem-Stokroos et al., 2003, Lyon, 2004). Receiving feedback and spending quality time with staff members was expected (Karani et al., 2014) and unanimously highly valued (van der Hem-Stokroos et al., 2003, McGinness et al., 2023, Hagg-Martinell et al., 2014, Ledger and Kilminster, 2015, Berkhout et al., 2017b). However, students could be very

circumspect and selective in seeking feedback according to the social dynamics or attributes of the staff members in question (McGinness et al., 2023).

2.4.3 The student role

Students voiced significant uncertainty about the role they adopted on clinical placements and how this differed to aspirational and experienced expectations of them (O'Brien et al., 2007, Cameron et al., 2011, Karp et al., 2019). Furthermore, though there are many contextual determinants of behaviour (see section 5.10), the student's role and behaviour is also considered to some extent self-determined and secondary to their own traits (O'Brien et al., 2007, Zaidi et al., 2012). Some students' patterns of behaviours can be traced back to the values they hold (see previous section) (Yeh et al., 2020).

In general, there was a shared expectation between students and tutors, that students should be 'proactive' in seeking and creating learning opportunities (Boor et al., 2008, Sheehan et al., 2005, Jaye et al., 2009, Cameron et al., 2011, Webster et al., 2019, Gurm et al., 2021, Song and Vance, 2021). This corresponds to the perspective that they are 'marginally participant' or on the peripheries of communities (Liljedahl et al., 2017, Shahi et al., 2015, Abeygunasekara et al., 2020), and therefore must 'step out,' be assertive and demonstrate interest in order to become more involved in activity and avoid passivity as the default (Lyon, 2003, Lyon, 2004, Sheehan et al., 2005, Jaye et al., 2009, Webster et al., 2019, Vanstone and Grierson, 2019, Somes et al., 2021, Remmen et al., 2000). Associated with such proactivity is an enthusiasm for learning and a positive attitude, which motivated both students and tutors alike to facilitate participation in activities (Lyon, 2004, Deketelaere et al., 2006, Gallagher et al., 2012, Vanstone and Grierson, 2019, Hellawell et al., 2021, Pinilla et al., 2021). Some students expressed a desire to be 'useful,' to feel part of the team and to contribute to patient care, all of which promoted their involvement in workplace practices and teams (Hagg-Martinell et al., 2014, Smith et al., 2013, Johnson et al., 2019, Kandiah, 2017, Kjaer et al., 2022, Jaye et al., 2009, Tanna et al., 2020). In comparison, students who were considered passive, shy, disinterested, lacking knowledge or lazy were less likely to be invited by staff

to participate in activities or to be seen to engage with them (O'Brien et al., 2007, Lyon, 2004, Deketelaere et al., 2006).

A perceived lack of a clearly defined role could also lead to students having the sense of being a 'burden' or 'nuisance' to clinical staff or feeling 'in the way' (Homberg et al., 2023, Lyon, 2003, Baecher-Lind et al., 2015, Berkhout et al., 2017a, Deketelaere et al., 2006, Jaye et al., 2009, Johnson et al., 2019, Somes et al., 2021). This perception was linked to withdrawal from activity and reticence in approaching staff or opportunities for fear of increasing their workload (Kennedy et al., 2009, Karp et al., 2019). Staff similarly could struggle from a lack of understanding or knowledge of what students should or could be doing during placements, which constituted a further barrier to participation and learning (Dolmans et al., 2008, O'Brien et al., 2007, Karp et al., 2019, Soukoulis and Gusic, 2018).

As per the previous section, students held complex beliefs in relation to the value of activities and opportunities. This perhaps provides one explanation for the selective nature of student engagement with opportunities (Lyon, 2003). Students could be overly focused on assessment, holding a 'tick-box' attitude to formal activities whilst neglecting other developmental opportunities (Deketelaere et al., 2006, McGinness et al., 2023, Brown et al., 2023). One analogy was of students being 'tourists' in the clinical environment (Liljedahl et al., 2023, Deketelaere et al., 2006). An exploration of the complex processes influencing students' decisions to engage with learning opportunities is a promising but under-developed area of research which this thesis addresses.

2.4.4 Affective experiences and how these translate to learning

Recognising the highly emotive nature of clinical environments (Lyon, 2003, O'Connor et al., 2017), medical students are described as experiencing a rollercoaster of emotions in association with their learning on clinical placements (Cameron et al., 2011). Negative emotions ranged from stress (Nsubuga et al., 2022), nervousness (Hagg-Martinell et al., 2016, Karp et al., 2019), anxiety (O'Brien et al., 2007, Deketelaere et al., 2006, Jaye et al., 2010, Cameron et al., 2011, Barrett et al., 2017, Nsubuga et al., 2022) fear (Lyon, 2003, Cameron et al., 2011), intimidation (Jaye et al., 2009), trepidation and apprehension (Cameron et

al., 2011), to frustration (Karp et al., 2019), feeling overwhelmed (Johnson et al., 2019), being confused (Johnson et al., 2019) and unhappy (Karp et al., 2019). Negative affective states in some cases were due to particular recurring circumstances, such as unfamiliarity with situations (Cameron et al., 2011) or mistreatment (Nsubuga et al., 2022, Jaye et al., 2009). The aforementioned lack of role could leave students feeling lost or useless (O'Brien et al., 2007, Homberg et al., 2023, O'Connor et al., 2017), whereas students over-trusted with responsibilities describe feeling nervousness and discomfort (Karp et al., 2019). Students also suffered from fatigue which could prevent them engaging with learning opportunities (van der Hem-Stokroos et al., 2003, Zhao et al., 2019).

On the contrary, students also described a wealth of positive emotions including curiosity (Hagg-Martinell et al., 2016, Cameron et al., 2011), 'enjoyment' (van der Hem-Stokroos et al., 2003, van der Zwet et al., 2011), excitement (Cameron et al., 2011, Karp et al., 2019), fun (van der Zwet et al., 2011), appreciation (van der Zwet et al., 2011), confidence (van der Zwet et al., 2011) and enthusiasm (Gupta and Howden, 2021). Experience of these positive affective states motivated students to engage with opportunities, particularly where students felt a sense of reward or satisfaction with activity (Zhao et al., 2019, Gupta and Howden, 2021, Dornan et al., 2007, Pearson and Lucas, 2011). Moreover, an evolution of emotional experience over time and experience was also recognised (Hagg-Martinell et al., 2016), where anxieties faded (O'Brien et al., 2007) and students became accustomed and even ambivalent to accommodating stressful environments (Liljedahl et al., 2017).

2.4.5 Conclusion

Uncertainty and ambiguity around medical students' role in clinical placements leads to heightened negative emotions and withdrawal from opportunities. Students selectively engage with opportunities which may partly be explained by how respective opportunities are valued. The latter is explored in more detail in the following section.

2.5 Medical Student Engagement and Utilisation of time

2.5.1 Introduction

Medical students' time use according to activity and duration was a particular focus of research studies 20-30 years ago, with few publications in recent years (Cook et al., 1992, O'Sullivan et al., 1997, van der Hem-Stokroos et al., 2004, Van Hell et al., 2009, Dolmans et al., 2001, Worley et al., 2004, Bugaj et al., 2017, Zhao et al., 2019, Burford et al., 2015, Gruppen et al., 1993). The historic nature of these investigations may cast doubt over their relevance. However, the following section will explore the points pertinent to this investigation including the variety of student engagement, patterns of disengagement and the nature of student activity.

2.5.2 Variety in experience

Diary and log-book and evaluative studies indicate a lack of uniformity in experience according to placement type, location and student (Hem-Stokroos et al., 2009, Dolmans et al., 1999, O'Sullivan et al., 1997, Burford et al., 2015, Gruppen et al., 1993, Seabrook et al., 2000, Remmen et al., 2000). This variation poses a challenge for medical programme organisers endeavouring to ensure attainment of universal objectives (Hem-Stokroos et al., 2009, Burford et al., 2015, Gruppen et al., 1993, Seabrook et al., 2000). Importantly, differences in engagement practices for individual students were also considered to account for some of the differences in experience. Daelmans reported 'huge inter-student variation', where differences in student attainment far outweighed differences in placement according to other variables analysed (Daelmans et al., 2004). Dolmans considered there to be 'strong differences' in student behaviour through evaluation of student log books, concluding that students were not achieving the full potential of the placement (Dolmans et al., 2001). Moreover, examining 15 potential learning opportunities during the student assistantship, it was estimated there was 40% of 'missed opportunities' across all tasks, where activities were present but not being taking up by students. Again there were significant differences between students, and importantly the students who gained more experience were also more positive about their placement (Burford et al., 2015).

2.5.3 Absence and disengagement

Parallel to these findings are suggestions of deliberate student disengagement and absence from placement. Interestingly, some studies required students to account for their time use both inside and outside of clinical experience (Cook et al., 1992, Worley et al., 2004, Zhao et al., 2019). In some cases, students spent a significant proportion of their overall time in clinical areas, at times seemingly at the expense of sleep, exercise or time with family/friends (Cook et al., 1992, Worley et al., 2004, Zhao et al., 2019). However, in other studies, students were also seen to avoid clinical areas or feel that their time was better spent at home (Woods et al., 2011, Yeh et al., 2020). In a recent audio-diary study, students left clinical areas early in favour of spending increased time at home in private study (Yeh et al., 2020). Deliberate absence was suggested in a study of student experiences of different obstetric departments, where in one location participants commented that student absence went ‘unnoticed’ (Boor et al., 2008). Indeed, one study revealed a student who spent 70% of their placement time in their own home (Worley et al., 2004). Another study described that students distinguished their GP placement from other clinical placements because ‘it made no difference whether they attended or not’ (Tanna et al., 2020). Furthermore, a prospective cohort study linked attendance on an obstetric and gynaecology clinical placement with academic performance where significant non-attendance was noted (Deane and Murphy, 2013).

2.5.4 Conceptualising ‘good value’ use of time

Student disengagement and absence is related to student ‘selectivity’ in relation to students’ evaluations of activities’ worth. Interestingly, many investigators of these diary studies also made value judgements in categorising student activity, for example delineating time as ‘unproductive’ (Van Hell et al., 2009) or citing concern at the time students spent in activities that were considered, ‘non-instructive,’ ‘ancillary,’ ‘scut work’ or ‘activities of limited learning value’ (Hem-Stokroos et al., 2009, Cook et al., 1992, van der Hem-Stokroos et al., 2004, Dolmans et al., 2001, Bugaj et al., 2017). This included tasks such as taking bloods, looking for X rays or results, or periods of waiting or observing (Hem-Stokroos et al., 2009, Cook et al., 1992, van der Hem-Stokroos et al., 2004,

Dolmans et al., 2001, Bugaj et al., 2017). Dolmans et al concluded that the effectiveness of time spent in hospital was only correlated if 'non-instructive' time was discounted, and encouraged such time use to be 'minimised' (Dolmans et al., 2001). Indeed, investigators have called for students to use their time 'efficiently' (Hem-Stokroos et al., 2009) a value which is increasingly mirrored in student behaviour and values (Liu and Li, 2023, Lyon, 2003, Baecher-Lind et al., 2015, Salminen et al., 2016, Webster et al., 2019). However, students appeared to vary in their perspective to 'menial' or 'grunt work.' In Yeh et al's study this was something they were reluctant to engage in (Yeh et al., 2020), whereas Vanstone's work elaborated that these tasks were a welcome focus in the face of role uncertainty or a perception of low hierarchical state (Vanstone and Grierson, 2019). More recently medical educators have re-emphasised the value of 'mundane' tasks as critical elements of junior doctor working that students can be unprepared for (Crossley and Vivekananda-Schmidt, 2015).

In some studies, the amount of time spent with patients was perceived as the key metric for success of a placement (Cook et al., 1992, Dolmans et al., 1999). Other studies focused on quantifying the amount of time spent 'actively participating' or 'doing' (Irani et al., 2010, Young et al., 2009, Bugaj et al., 2017). The latter was emphasised by medical students who described favouring 'learning by doing' (van der Zwet et al., 2011) or focused on 'getting stuff done' (Vanstone and Grierson, 2019).

2.5.5 Conclusion

Student engagement with opportunities on clinical placements appears highly variable, with significant disengagement and absence reported. Inherent to some diary studies are value judgements about what is 'good' use of student time including an emphasis on 'doing'; the importance of seeing patients and the conceptualisation of work conceived as 'menial' or 'grunt' work. Students appear to have their own response to the latter, but the emphasis on 'maximising' effective time use remains.

2.6 Contexts and clinical environments and how these relate to student learning

2.6.1 Introduction

Clinical learning during placements takes place over a range of different contexts with variation according to structure, specialism, stage of training and geographic location. The literature explores medical students' experiences across these numerous contexts and describes features which are almost universal as well as aspects unique to the context in question. For example, studies of intensive care environments identify the unique challenge for students in navigating equipment and high acuity patients (O'Connor et al., 2017). Studies conducted in the obstetric environment have established these could be especially stressful contexts, prone to student exclusion and mistreatment due to the high-intensity and sensitive nature of childbirth (Baecher-Lind et al., 2015, Cotter et al., 2016, Johnson et al., 2019, Boor et al., 2008, Kappy et al., 2019). GP placements were favoured for the opportunity to practise independently and increased social integration with patients and doctors when living in close proximity (Roberts et al., 2017, Gottlob et al., 2019, van der Zwet et al., 2011). The theatre environment could be particularly emotive for students who are described as feeling 'fearful' due to role uncertainty and the intensity conferred by patient risk involved in operations (Lyon, 2004, Lyon, 2003, Stark, 2003).

Placement length and type is another variable, where the benefits of Longitudinal Integrated Clinical Placements include improved learning from continuity of experience from placement and staff (Gupta and Howden, 2021, Roberts et al., 2017, Richards et al., 2022, Henschen et al., 2015). On the other hand, Assistantships, with a focus on apprenticeship learning, have demonstrated improved student integration within teams and engagement with learning processes with the intention of better preparing students for practice (Burford et al., 2015, Kinston et al., 2024, Fung et al., 2022, Crossley and Vivekananda-Schmidt, 2015). These are well studied aspects of medical education, which will not be further examined. The following section will briefly examine the following contextual features of clinical placements that have been seen to determine medical student engagement with learning: organisational and logistical aspects;

climate and atmosphere of environments; social dynamics; supervision and patient characteristics and the process of navigating between placements.

2.6.2 Organisational and curricula aspects

Medical students are sensitive to the perceived 'organisation' of a clinical placement and whether arrangements were in place which helped them to navigate successfully through an environment (Dolmans et al., 2008, Salminen et al., 2016, O'Connor et al., 2017, Boor et al., 2008, van der Zwet et al., 2011, Gallagher et al., 2012, Hagg-Martinell et al., 2014, van der Zwet et al., 2010, Thomson et al., 2014, Dornan et al., 2007, Molwantwa et al., 2019). Being 'expected' and welcomed on placement was valued, as was having a 'named' supervisor or someone to 'attach' to (Liljedahl et al., 2015, Barrett et al., 2017, Dolmans et al., 2008, Remmen et al., 2000). The presence of other medical students, students from other disciplines, and medical trainees could also influence learning experiences through competition for opportunities and supervisor attention (Dolmans et al., 2008, Dolmans et al., 2002, Sharma and Miloslavsky, 2022, Shahi et al., 2015, Lyon, 2003, Dornan et al., 2007, Sheehan et al., 2005, Hollein et al., 2007, Jaye et al., 2010, Jaye et al., 2009, Berkhout et al., 2015, Berkhout et al., 2017b, Hess et al., 2022). Practical logistical aspects, such as the availability of a clear and detailed timetable were paramount (Dornan et al., 2007, Lucas and Pearson, 2005).

2.6.3 Climate and atmosphere

The 'atmosphere' of a clinical environment was perceived by students to influence their learning experience (Berkhout et al., 2015). 'Friendliness,' staff supportiveness and staff enthusiasm for teaching created a 'positive' atmosphere which the students enjoyed and appreciated (Salminen et al., 2016, van der Zwet et al., 2011, Hagg-Martinell et al., 2014, Barrett et al., 2017, Liu and Sullivan, 2021, Shahi et al., 2015, Gallagher et al., 2012, Thomson et al., 2014, Berkhout et al., 2017b). Contrastingly, an atmosphere of competitiveness and 'showboating' could impede learning (Barrett et al., 2017). A perception of 'busyness' within the clinical environment was also an impediment to learning and

given as a reason to withdraw from opportunities (Shahi et al., 2015, Lyon, 2003, Liu and Sullivan, 2021, van der Hem-Stokroos et al., 2003, Delva et al., 2004).

2.6.4 Social dynamics, patients census and supervision

Clinical environments are complex social structures and subtleties in the dynamics of how staff related to each other and students were important contextual influences. Medical students were acutely cognisant of the 'hierarchy' (Shahi et al., 2015, Hagg-Martinell et al., 2014). A perception of having a 'lowly' status could be immobilising and lead to student withdrawal (McClintock et al., 2022, Gardeshi et al., 2018). Other studies suggest that the effects of the hierarchy diminish over time, or can be overcome for example through student proactivity (Sheehan et al., 2005, Berkhout et al., 2017a, Roberts et al., 2017). Negative social practices included a culture of student mistreatment, 'grilling' students, ignoring students or otherwise excluding them from participation (Lyon, 2004, Dornan et al., 2007, Stark, 2003, Boor et al., 2008, Jaye et al., 2009, Dolmans et al., 2008, Baecher-Lind et al., 2015, Liljedahl et al., 2015, Barrett et al., 2017, Scott et al., 2019, Hagg-Martinell et al., 2017, Gamble Blakey et al., 2019, Rudland et al., 2021, Kappy et al., 2019). Positive social practices included welcoming and greeting students, referring to them by name, connecting on a personal level and being perceptive of their needs (Roberts et al., 2017, Dornan et al., 2007, Sheehan et al., 2005, Cameron et al., 2011, Pearson and Lucas, 2011, Gathright et al., 2016, Barrett et al., 2017, O'Connor et al., 2017, Gamble Blakey et al., 2019, Steven et al., 2014). Students also perceived that their experiences were greatly influenced by 'patient census,' that is the number of patients and their health and social characteristics (Dolmans et al., 2002, Hoffman and Donaldson, 2004, van der Zwet et al., 2011, van der Zwet et al., 2010, Steven et al., 2014, Reid et al., 2014).

Clinical supervision during clinical placements is a multi-faced concept which will not be examined in detail in this thesis but can be summarised as an important feature promoting student learning where practices are effective and appropriate trust is placed in students (Dolmans et al., 2002, Boor et al., 2008, van der Zwet et al., 2011, Dolmans et al., 2008, Liljedahl et al., 2015, Salminen et al., 2016, Karp et al., 2019, Strand et al., 2015).

2.6.5 Physical space, navigation and transition

Aspects pertaining to the physical environment also influenced student learning, particularly where students frequently move between different clinical areas. The logistical challenge in navigation is recognised as part of the well-studied phenomenon of 'transition' (Salminen et al., 2016, Johnson et al., 2019, Tanna et al., 2020, Masters et al., 2013, O'Brien et al., 2007, Teunissen and Westerman, 2011, Atherley et al., 2019). This will not be covered in depth in this thesis. Pertinent aspects include the role of orientation processes in facilitating student transition (Cotter et al., 2016, Atherley et al., 2019) and the informal and formal structures utilised to support 'hand-over' between students about managing the physical, social and cultural aspects of new environments (Jaye et al., 2010, Masters et al., 2013, Chou et al., 2014, Bransen et al., 2022).

Students' occupation of physical space whilst in clinical environments was influenced by the structures in place, and how they interacted with them. Students could be overwhelmed by crowded clinical areas (Hess et al., 2022, Barrett et al., 2017, Nsubuga et al., 2022) and had a tendency to occupy a position on the periphery or background (Tai et al., 2017, Jaye et al., 2009, Horner et al., 2020). Associated with this, was a need for 'space' for learning and preference for retreating to 'safe' non-clinical areas they could call their own such as common rooms and student libraries (Hagg-Martinell et al., 2014, Barrett et al., 2017, Dolmans et al., 2002, Dornan et al., 2007, Gathright et al., 2016, Molwantwa et al., 2019, Tanna et al., 2020, Morris et al., 2024, Stark, 2003). On the contrary, some students particularly favoured sharing a physical/adjacent space with staff members to foster a sense of involvement in clinical teams (Berkhout et al., 2015, Berkhout et al., 2017b). Moreover, in clinic based environments, students preferred to have their 'own' room which conferred status and identity (Salminen et al., 2016, Horner et al., 2020, van der Zwet et al., 2011, Thomson et al., 2014, Kjaer et al., 2022). It was important that this room was adequately equipped for example with computers on which students could access IT facilities and patient records (Hagg-Martinell et al., 2014, Salminen et al., 2016, Homberg et al., 2023, van der Zwet et al., 2011, Hagg-Martinell et al., 2017, Dolmans et al., 2002). The students also valued appropriate clothing including identification lanyards (Hagg-Martinell et al., 2014, Barrett et al., 2017).

2.6.6 Conclusion

Contextual aspects of clinical placements are important determinants of student learning. The length, duration, setting and character of clerkships were all influential, with patterns of experience evident according to different specialty focus. Students were also sensitive to how well organised placements were, the reception they received and the presence of other staff and students which could be a source of competition. There was a perception of different atmospheres on placement which could support or impede learning. Complex social dynamics influenced student experience, with important aspects including how students navigate the medical hierarchy and patient census. Physical arrangements such as the space available for learning and the logistics of moving through different clinical areas at pace were also determinants of student experience and engagement. However, although enlightening, many of these findings rely on simple evaluations of student self-reports, at times lacking depth and richness in description (Hess et al., 2022, Molwantwa et al., 2019, Kappy et al., 2019, Dolmans et al., 2008, Salminen et al., 2016, Cameron et al., 2011, Homberg et al., 2023). Other qualitative investigations are lacking robust analysis and higher-level theoretical development (Gallagher et al., 2012, Stark, 2003). Given these deficiencies, contextual influences on student learning during clinical placement remained an area of interest and further investigation for this research study.

2.7 The ‘Hidden Curriculum’ and student learning on clinical placement

2.7.1 Introduction

A popular concept relating to student learning on clinical placement is that of the ‘hidden curriculum.’ The following section will define and examine the term, and outline its relevance to the study phenomenon.

2.7.2 Definition

The ‘hidden curriculum’ is a contentious concept with multiple definitions (Lawrence et al., 2018). Fundamentally, the term is used to describe learning that goes beyond the perceived formal and even informal curricula (Hosseini et al., 2023, Hafferty, 1998), though the latter distinction is less clear in practice

(Lawrence et al., 2018). Originally an education derived concept, Hafferty was the first to use the 'hidden curriculum' in the context of medical education (Yazdani et al., 2020). He loosely defined this from an ethical perspective as "a set of influences that function at the level of organizational structure and culture" (Hafferty and Franks, 1994). Other popular conceptualisations of the hidden curriculum include the "processes, pressures, and constraints which fall outside of, or are embedded within the formal curriculum and which are often unarticulated or unexplored" (Cribb and Bignold, 1999, Almairi et al., 2021, Gardeshi et al., 2018, Lempp and Seale, 2004).

2.7.3 Framing, conceptualisation and application

At its inception, the 'hidden curriculum' had negative connotations and it has been embraced as a means of encapsulating the adoption of adverse beliefs, behaviours or attitudes occurring through social interaction in learning contexts (Hafferty and Franks, 1994, Brown et al., 2020, MacLeod, 2014, Monrouxe, 2010, Gardeshi et al., 2018). Thus, in some contexts the 'hidden curriculum' is considered 'subversive' to the intended curriculum, and numerous interventions are described to 'remediate' such learning (Brown et al., 2020, Hafferty and Franks, 1994, Zgheib et al., 2020, Chapa et al., 2022, Henschen et al., 2020). More recently, counter articles have tried to reframe the 'hidden curriculum' and promote the 'positive' learning that can occur in this sphere (Brown et al., 2020, Hosseini et al., 2023, Almairi et al., 2021, Kaufman, 2019). Others have striven to formalise or uncover 'hidden' aspects of learning and adopt them into the formal learning programmes (Zgheib et al., 2020, Chapa et al., 2022, Dwinnell and Barley, 2000).

2.7.4 Relevance to this study

Given sociocultural learning is paramount in the complex clinical environment, arguably the 'hidden curriculum' is of particular relevance to research in this field (Hosseini et al., 2023). However, this thesis takes the counter stance that the concept of 'hidden curriculum' is of limited utility. That there is learning that occurs through engagement in the social and environmental contexts of a clinical workplace is self-evident. Considering the 'unknown unknowns' of a learning

programme is perhaps worth considering from a curricular planning perspective. However, the nature, characterisation and context of this learning is of far greater interest than the semantics of whether these features pertain to an articulated curriculum. MacLeod casts consternation on the definition and liberal use of this term, raising the question of its future relevance where numerous concepts are now more 'known' than hidden (MacLeod, 2014). Indeed, several informative papers on diverse aspects pertaining to this thesis have been written under the banner of 'hidden curriculum' despite this seemingly doing little to add value to conceptual development of the subjects addressed. Examples include professionalism (Brown et al., 2020), student-faculty relations (Almairi et al., 2021), empathy (Zgheib et al., 2020), peer learning (Lu and Kumar, 2023), near-peer learning (McKenna and Williams, 2017), environmental influences to learning (Yazdani et al., 2020), motivation to learn (Gardeshi et al., 2018) and continuity of patient care (Henschen et al., 2020). This is perhaps representative of the favour or 'trend' associated with this term in relation to publication and article 'reach' (MacLeod, 2014).

2.7.5 Conclusion

Despite the popularity of this term, the concept of the 'hidden curriculum' is not considered inherently worthy of specific focus in relation to this thesis. Thus, key findings from papers describing the hidden curriculum will be introduced in the relevant sub-section of this chapter and in discursive elements, rather than through any formal discourse.

2.8 Self-regulated and self-directed learning

2.8.1 Introduction

The following section critiques the literature addressing student learning on clinical placement from the perspective of self-directed and self-regulated learning.

2.8.2 Origins and definitions and conceptualisations

In the last century the necessity and advantage in students independently directing their own learning has become an imperative within modern medical curricula, formalised in the 1988 'Edinburgh Declaration' (World Federation for Medical Education, 1988, Ricotta et al., 2022). Defining and conceptualising self-directed learning within medical education and in the context of clinical practice has been more problematic (Gandomkar and Sandars, 2018, Ricotta et al., 2022, Greveson and Spencer, 2005). Rooted in adult learning theory, Knowles suggests a definition of self-directed learning (SDL) as "a process in which individuals take the initiative without the help of others in diagnosing their learning needs, formulating goals, identifying human and material resources, and evaluating learning outcomes", page 18 (Knowles, 1975). This shares similarities with the related concept of 'self-regulated learning' (SRL). SRL is popularly defined by Sitzman and Ely as "the modulation of affective, cognitive, and behavioural processes throughout a learning experience to reach a desired level of achievement" (Sitzmann and Ely, 2011, van Houten-Schat et al., 2018, Berkhout et al., 2018). Indeed, there has been some confusion in conceptualising these terms which have been used inter-changeably within the medical education literature (Gandomkar and Sandars, 2018, Sandars and Cleary, 2011, Greveson and Spencer, 2005). Gandomkar and Sandars attempt to clarify the two processes according to their scope and motivational underpinning. According to their distinction, self-regulated learning involves a more targeted focus on goals as specific tasks and how to achieve them. On the other hand, self-directed learning encapsulates more broadly the responsibility taken by an individual for their own learning where there is an internal motivation to develop learning processes. Thus, an effective self-directed learner will use SRL processes, but SRL can lack self-direction where goals are set externally (Gandomkar and Sandars, 2018).

2.8.3 Relating SDL and SRL to learning on clinical placements

Both SDL and SRL are concepts favoured by those exploring learning within clinical contexts. Distinct from classroom settings, it has been suggested that in the workplace learners must take greater responsibility for their own learning

given the shift in emphasis to service provision and clinical care (Dornan et al., 2005, Tolsgaard et al., 2013, Berkhout et al., 2017b). However, apparent in the literature is a tension in applying terms emphasising formal learning processes to learning environments where informal learning and contextual features are paramount (Berkhout et al., 2018, Ricotta et al., 2022, Woods et al., 2011). One means of circumventing this challenge has been to flex and stretch the definitions and conceptualisations of these terms. Dornan et al in 2005 defined self-directed learning simply as students being in the 'driver's seat' for their learning. This enabled a broad examination of the processes influencing students' management of their own learning in clinical contexts without being tied to explicit processes (Dornan et al., 2005). The Association of American Medical Colleges has similarly focused on self-directed learning as 'taking your own initiative,' They have proposed an adaptation of the term for medical educators, encapsulated in a new definition of 'Self-directed Learning in Medical Education' (SDL-ME) as "a core attribute of professional identity that emphasizes personal responsibility and accountability for one's own continuous growth in knowledge, skills, and attitudes within the context of relationships to patients, colleagues, team members, and responsibility to society" (Ricotta et al., 2022). Their suggestion is that this conflated definition is better suited to post-graduate and undergraduate learning in the clinical environments. The model suggests four elements required to promote SDL within curricula: 'assessment,' 'faculty development and pedagogy,' 'personal attributes' and 'institutional environment' (Ricotta et al., 2022). Arguably problematic to this framework is the retention of a 'top-down' focus on formal learning processes under external control of medical educators, rather than considering the organic interaction between learner and environment.

This challenge to exploring workplace learning practices resonates through the literature examining self-directed and self-regulated learning in the workplace (Liu and Sullivan, 2021). Considering self-regulated learning, through successive studies examining SRL in the clinical environment Berkhout et al have recognised the deficiencies of SRL theory in understanding medical student learning in the workplace. This includes students' lack of awareness of their learning processes, their neglect in establishing learning goals and the importance of social, cultural and environmental determinants of learning (Berkhout et al., 2018, Berkhout et

al., 2015, Berkhout et al., 2017b, Berkhout et al., 2017a, Berkhout et al., 2017c). In contrast to the organised, controlled cyclical model of self-regulated learning, it was recognised that much of learning in the clinical environment was unplanned, reactive and devoid of specific goals (Berkhout et al., 2015, Berkhout et al., 2017a). Berkhout et al consider this to be a 'flexible, opportunistic' variant of self-regulated learning (Berkhout et al., 2017b), favouring Brydges et al's conceptualisation of SRL as 'recursive, dynamic and flexible'. The latter model favours a greater focus on 'co-regulated' learning rather than 'self,' recognising the role of context and other social actors (Brydges and Butler, 2012). This more expansive conceptualisation of SRL has gained popularity in recent studies (Woods et al., 2011, Lyons-Warren et al., 2016, Bransen et al., 2022). Arguably, as these conceptualisations move away from traditional models of self-regulated and self-directed learning, they draw closer to capturing the reality of workplace learning practices and concurrently diminish the relevance of these constructs to examining learning in clinical placements.

2.8.4 Critique of the literature addressing medical student SRL and SDL in clinical workplaces

A closer examination of the literature addressing self-regulated and self-directed learning in the clinical context provides some insights relevant to this study phenomenon and highlights deficiencies justifying the relevance of this investigation. Firstly, as alluded to in the previous section, the literature suggests that students are circumspect in relation to their self-directed learning behaviour and their learning 'goals' lacked depth, breadth and specificity - if they were present at all (Dornan et al., 2005, Berkhout et al., 2015, Lyons-Warren et al., 2016). Goals developed by students in relation to learning tended to be focused on diagnosis, management and the 'content' of patient interactions rather than their overall development as a professional (Berkhout et al., 2017b, Liu and Sullivan, 2021). SDL was considered by some students as 'inefficient' and there was a concern to cover core curriculum objectives (Dornan et al., 2005). Moreover, students' goals in the clinical environment could be directed towards 'performance' and managing the impression they were making on others rather than on learning (Berkhout et al., 2015, Berkhout et al., 2018). There was also an

over-emphasis on 'assessment' (Woods et al., 2011). Though it was recognised that more experienced students had a greater sense of autonomy and were more focused on what kind of doctor they wanted to become (Berkhout et al., 2017a), the trend was that students were heavily reliant on external facilitation and working with staff members in achieving their goals (Dornan et al., 2005, Berkhout et al., 2015). Students described feeling challenged to share their learning goals with staff in clinical contexts (Lyons-Warren et al., 2016). A tension also existed where students considered goals to be externally set by staff and focused on 'service provision' rather than learning (Woods et al., 2011, Berkhout et al., 2015). Woods commented that 'daily activities can become an exercise in self-regulated learning,' recognising the role of informal learning in clinical environments (Woods et al., 2011). However, this attention to tacit learning and models of learning through participation could be under-recognised by students and investigators alike (Ricotta et al., 2022, Berkhout et al., 2015, Liu and Sullivan, 2021). This was most apparent in Liu's exploration of self-directed learning in the workplace which appeared overly focused on students' private study patterns and the activities they engaged with on leaving the clinical environment (Liu and Sullivan, 2021). Indeed, bias may have been introduced to investigations of SDL and SRL due to the context of data collection around an intervention (Tolsgaard et al., 2013, Dornan et al., 2005, Lyons-Warren et al., 2016) or following 'briefing' on the subject (Berkhout et al., 2017b, Berkhout et al., 2017a), which may have directed focus towards the formal aspects of learning. This is particularly problematic given the neuropsychological phenomenon of humans attributing conscious will to decisions which were in fact unconscious (Wegner, 2003).

Approaches to goal-directed learning in the clinical environment were perceived to be highly individualistic and person-specific (Berkhout et al., 2015, Berkhout et al., 2017a, Woods et al., 2011). Students' SRL and SDL varied according to their attributes, prior experience, motivational drive, approach to learning, ability to emotionally regulate, confidence, career aspirations and behavioural trends (Berkhout et al., 2015, Berkhout et al., 2017a, Dornan et al., 2005, Lyons-Warren et al., 2016, Liu and Sullivan, 2021). Considering the latter, Dornan conceptualised SDL behaviour as grouped into three categories; 'performing,'

'observing' and 'being taught.' Self-directed learning worked best for the more 'motivated' and 'organised' of students (Dornan et al., 2005). Berkhout went further to characterise students according to their approach by analysing the patterns of how they self-identified with statements of typical behaviour construed by the authors (Berkhout et al., 2017c). The five categories established were 'engaged,' 'critically opportunistic,' 'uncertain,' 'restrained' and 'effortful.' These classifications attempting to stereotype student behaviour were perhaps less convincing than some of the behavioural determinants they described, some of which were resonant with the broader literature. Pertinent aspects included the students' approach to work and if they were hard-working and willing to put in the effort to learn (Berkhout et al., 2017c, Berkhout et al., 2015). Also relevant was the level of 'enthusiasm' for learning (Berkhout et al., 2017c) and student ability to self-regulate and for reciprocity in student and teacher engagement with learning as part of a 'growth mindset' (Berkhout et al., 2017b, Liu and Sullivan, 2021). Related to this pattern of behaviour was a student focus on their image and the impression they gave to others, which could contradict efforts to learn (Berkhout et al., 2017c, Liu and Sullivan, 2021), for example through avoidance of academic risk (Woods et al., 2011). Students could become fearful to ask questions or admit difficulty and the role of confidence levels and extent of self-criticism were influential (Berkhout et al., 2017c). Different patterns were also evident in how the students related to the environment and those in it. Students could be critical toward the environment, indifferent, or overwhelmed by it. In relation to participation, students could be proactive or reactive, active or passive or have a focus on seeking 'pleasure' (Berkhout et al., 2017c). Some students preferred working independently, whereas others relished social interaction (Berkhout et al., 2017c). Student autonomy was also valued and considered important to enable students to pursue their personal interest and become involved in patient care (Berkhout et al., 2015, Berkhout et al., 2017b, Lyons-Warren et al., 2016). However, Dornan's study found autonomous learning was a rarity (Dornan et al., 2005) and the need for social support in achieving autonomy was paramount (Berkhout et al., 2017a). Berkhout 2017 found differences in student behaviour according to stage of training with more experienced students acting more autonomously to take control of their learning (Berkhout et al., 2017a). However, this may be context dependent as well as individually driven

given the majority of students in Lyons-Warren study of surgical students found they did not feel they could be flexible in managing their time according to their interests and felt constrained in how they could negotiate involvement in tasks (Lyons-Warren et al., 2016). The former is particularly relevant given the value students placed on the availability of time, and the focus of managing time efficiently to optimise learning and achieve work-life balance (Berkhout et al., 2015, Liu and Sullivan, 2021, Woods et al., 2011). Moreover, the students' relation to clinical work could also be determined by their perception of task difficulty or their comfort with it, their perceived value of the task, the anticipated outcome of engaging with a task and how the students perceived their role (Berkhout et al., 2015, Berkhout et al., 2017a, Woods et al., 2011).

Considering now the social influences of SRL and SDL, both staff and peer relationships were highly influential. Staff members were utilised by students as a source of knowledge (Liu and Sullivan, 2021), direction (Dornan et al., 2005), support (Dornan et al., 2005, Bransen et al., 2020, Berkhout et al., 2017a, Liu and Sullivan, 2021) and as a means for engaging with clinical learning (Berkhout et al., 2018, Berkhout et al., 2015, Berkhout et al., 2017b). Students actively tried to establish relationships with staff members (Bransen et al., 2020, Berkhout et al., 2017a). The importance of continuity of contact and duration of experience on relational development has made Berkhout a strong proponent for longitudinal placements (Berkhout et al., 2018, Berkhout et al., 2015, Berkhout et al., 2017b). Also influential to engagement was the nature of staff behaviours and whether this was broadly positive and 'friendly' or negative, with problematic behaviours including staff being indifferent or unavailable to students, or actively mistreating them (Dornan et al., 2005, Berkhout et al., 2015). Engaging informally with staff on a routine basis e.g. through eating together was found to be particularly conducive to supporting SRL (Berkhout et al., 2017b). As a process, students also valued the tendency for staff to ask them questions and some students especially favoured this sense of 'continuous assessment' as a useful means of achieving SRL (Berkhout et al., 2017b), whereas others found this counterproductive (Liu and Sullivan, 2021). One important aspect was the perceived 'psychological safety' of clinical areas, which references a supportive environment where the culture favours individuals sharing their uncertainties or

errors without criticism (McClintock et al., 2022, Berkhout et al., 2017b, Liu and Sullivan, 2021). Relevant to this was a sense of 'hierarchy' where power dynamics especially for newcomers and novices could hamper a student's ability to engage in SDL and SRL (Tolsgaard et al., 2013, Berkhout et al., 2015, Berkhout et al., 2017a). Furthermore, peer relations were also critical to SDL and SRL processes. The emotional support provided by peers facilitated learning and peers were an important source of knowledge and direction (Dornan et al., 2005, Bransen et al., 2020, Berkhout et al., 2015, Berkhout et al., 2017a). Students used peers as a benchmark for acceptable behaviour and as exemplars for how to engage with activities (Dornan et al., 2005, Berkhout et al., 2017a). However, a sense of competition between peers could hamper SRL and foster negative emotional experiences (Berkhout et al., 2017a).

In addition to the social dynamic, the physical, cultural and contextual features of clinical environment also determined SDL and SRL. Berkhout considered SRL as highly contextually specific, recognising that staff and students can behave very differently in different contexts (Berkhout et al., 2015, Berkhout et al., 2017a). At the heart of clinical workplaces is the care of patients, and different patterns of delivering patient care were considered more or less conducive to SRL processes. For example, highly specialist areas, very short and long stay areas, those with excessive workloads or time constraints and those with a 'homogenous' patient-mix were considered less suitable (Berkhout et al., 2015, Berkhout et al., 2017b, Liu and Sullivan, 2021). Indeed, Berkhout concluded that some areas were frankly unsuitable for SRL and that in some environments opportunities just are not there for students to meet their goals (Berkhout et al., 2015, Berkhout et al., 2017b). Curricular features such as the duration of placement were also considered relevant, with short rotations through multiple specialties considered inhibitory of SDL and SRL (Tolsgaard et al., 2013, Berkhout et al., 2017b). Other influences included student numbers, physical structure and the 'atmosphere' of environments which are discussed in the previous sections (Berkhout et al., 2015, Berkhout et al., 2017b, Liu and Sullivan, 2021).

2.8.5 Reviews of the SDL and SRL literature

Berkhout, Van Houten et al and Cho's attempts to synthesize and appraise the literature on self-regulated learning provide some additional insights into SRL and SDL in clinical environment (Berkhout et al., 2018, van Houten-Schat et al., 2018, Cho et al., 2017). Berkhout et al's 2018 commentary stresses the importance of social and contextual learning, relating this to educational theories of 'self-determination theory,' 'achievement goal theory,' 'constructivist learning theory' and 'workplace affordances' (Berkhout et al., 2018). Cho et al indicate that SRL processes adapt over time and are influenced by experience as well as support mechanisms such as technical aids (Cho et al., 2017). Van Houten et al conclude with the reflection that skill in SRL in academic areas may not necessarily translate into clinical areas. They also propose the challenge that students in clinical areas cannot solely focus on their own learning goals as these are subsidiary to the care of patients (van Houten-Schat et al., 2018). However, arguably any individual goal is subject to social pressure regardless of the environment given our function as social beings.

2.8.6 Conclusion

Self-directed and self-regulated learning are poorly defined but important concepts with respect to student learning in the workplace. As vehicles for examining the essence of opportunistic informal learning on student learning and engagement on clinical placement, they become problematically constraining. However, there is a wealth of literature in this domain which provides useful insight into this study phenomenon. Indeed, seminal works addressing SDL/SRL have directly or indirectly uncovered important individual, social and contextual influences relating to students' decision-making around engaging with learning opportunities in clinical workplaces. This thesis will build upon and expand upon some of these concepts.

2.9 Peer and near-peer learning in the workplace

2.9.1 Introduction

As alluded to in previous sections, medical students' interactions with their peers are an important determinant of learning during clinical placements. As a formal educational concept, Peer Assisted Learning (PAL) is commonly defined as "people from similar social groupings, who are not professional teachers, helping each other to learn and by so doing, learning themselves" (Topping and Ehling 1988 in – (Gogus, 2012). The beneficial effects of PAL to both learner and teacher are increasingly recognised within medical undergraduate education, reflected in a flurry of publications on this subject in the last two decades (Tai et al., 2016, Tamachi et al., 2018, Morris et al., 2024). However, relatively few studies address the subject of informal peer-based learning within clinical environments and those that do are limited in scope, methodological approach or overall quality (Tai et al., 2017, Tamachi et al., 2018, Morris et al., 2024, Tai et al., 2014, Kommalage and Thabrew, 2011, Chou et al., 2014). The following section synthesises and critiques the available literature with respect to the study phenomenon.

2.9.2 Learning from reviews of PAL in the medical clinical placements

Tai et al's 2016 systematic narrative review examined 43 studies addressing same-level peer-assisted learning in medical clinical placements and synthesised 36 papers considered to be of sufficient quality. Formal PAL interventions in clinical placements included role-playing, peer assessment, peer teaching and facilitated group discussions. Benefits to learners included: improvements in clinical skills; reflective practice and problem solving; increased feedback received and development in evaluation skills; increased empathy and social connection with peers and patients; improved confidence, motivation and ability to navigate the clinical environment and a recognition of the supportive space created by PAL (Tai et al., 2016). However, the studies in question were highly dependent on student self-report, potentially conferring bias. They also focus on formal manifestations of PAL, despite recognising that much of PAL in clinical placements will be ad-hoc and opportunistic (Tai et al., 2016).

2.9.3 Studies examining formal PAL structures

Tamachi et al's interpretive phenomenological analysis of peer-assisted learning illustrates this, focusing on peer learning in a 'formal near-peer intervention scheme.' The intervention was designed to promote clinical skills within clerkship students but examines the sessions in contrast to the organic clinical environment, rather than within it (Tamachi et al., 2018). A key take home from this study was the 'threat' perceived in the clinical environment, and the sense of camaraderie shared with near-peers (Tamachi et al., 2018). Kommalage et al similarly examine PAL in parallel to clinical placements, focusing on 'Kuppi classes,' the peer-led study sessions led by medical students for medical students. Notable findings included the role peer-interactions play in knowledge transfer, the focus on studying for assessment, the importance of familiarity in person and surroundings and the role social bonds can play in motivating students to engage with learning (Kommalage and Thabrew, 2011). However, although providing insight into student dynamics, the study of these 'informal' groups focuses on explicit knowledge rather than implicit, ad hoc, peer learning in workplaces.

2.9.4 Survey studies of PAL during clinical placements

Two notable studies utilised survey methodology to explore unstructured PAL during clinical placements. Tai et al conducted a survey with third year medical students examining both structured and unstructured peer-learning during their clinical placements (Tai et al., 2014). One focus was the 'location' of PAL. A key finding was that most PAL occurred on the wards, followed by the student common room. Other informal locations included the cafeteria and 'outside the hospital' whereas formal settings included 'clinics,' 'tutorials' and 'bedside tutorials.' A potential limitation to this questionnaire is that it was based on the authors' experience, which may have missed other important locations for PAL especially in the presence of a relatively large 'other' category. There was also no breakdown of where on the 'wards' PAL was occurring. Considering the rhythm of PAL, this was found to occur regularly on clinical placements across a breadth of activities, with same-level peers as the preferred tutor, closely followed by 'near peers.' Themes emerging from the analysis focused on what was useful about

PAL and included the benefits from rehearsing material and teaching as a learning strategy as well as 'judgement building' about required standards. 'Not useful' aspects included not feeling qualified to 'judge' peers and the unstructured nature of PAL which was considered 'nebulous' and inferior to formal teaching approaches. This is potentially particularly indicative of students' restrictive appreciation of what is considered 'learning and teaching' and may suggest that implicit aspects of PAL may be omitted through self-reporting. Finally, in their discussion and concluding remarks, the authors cite the fact that PAL 'does not impact friendships,' or foster 'unhealthy competition' which is an important finding contrasting with that is known in the literature. This interpretation of findings is questionable when their own results demonstrate that 20% and 24% of students respectively agreed with the statements 'it encourages healthy competition' and 'it increases strain on friendships'. In the context of the overall response rate to the survey of only 13%, drawing such conclusions is tenuous at best, and bizarre at worst (Tai et al., 2014).

Chou et al's survey of learning through peer groups on clinical placements was more enlightening regarding the nature of peer group relations (Chou et al., 2014). This study asked students to self-report on their engagement with ad hoc or formalised peer groups and how interactions impacted upon their workplace learning. The resultant themes were interesting, but arguably a consequence of 'leading' questions in the questionnaire. For example, how peer groups helped students to understand their expected roles and responsibilities in upcoming placements, expectations of workplace practices and learning about clinically based tasks. One interesting dimension was the emphasis on comparison with the performance of peers, which both motivated and demotivated students, a finding paralleled in other work in social comparison (Keren et al., 2020, Bransen et al., 2020, Raat et al., 2010, Hommes et al., 2012). Also discussed was the nature of social support within peer groups which provided a safe space for learning and promoted well-being (Chou et al., 2014). This resonates with Tamachi's IPA study on PAL (Tamachi et al., 2018) and the wider literature on student social identity (McNeill et al., 2014, Morris et al., 2024, Lovell, 2015).

2.9.5 Ethnographic studies of peer assisted learning

Tai et al's later ethnographic study of peer assisted learning during clinical placements is of greater quality and rigour than their earlier work (Tai et al., 2017, Tai et al., 2014). This combined interviews with both third year medical students and clinicians and observations across a breadth of activities, though some activities and environments were not included through choice or necessity. Interestingly, an average 8 out of 29.3 hours on placement were spent conducting independent study, meal breaks, periods of waiting and social interactions with other students and the students spent 2/3 of their time with other students. This supports the importance of non-formal learning between peers as relevant to clinical placements overall. In clinical areas, students learnt from each other by working in pairs, taking turns to observe and learn 'vicariously' through evaluating the student's performance according to standards and their own performance. This type of learning through watching was also observed in bedside tutorials which students favoured. Another important finding that students' willingness to engage with feedback exchange with peers was dependent on trust built up over time, where PAL was considered most useful towards the end of the year (Tai et al., 2017). Unfortunately, despite a significant time spent observing students in non-formal environments, the authors do not further characterise student behaviour and the nature of PAL occurring in these environments.

Morris et al's 2024 ethnographic study focuses on PAL in pre-clinical years and so is not directly applicable to clinical placements. However, the investigators followed students on to their 'early clinical experiences' and as such provide some interesting insights into the nature of peer dynamics in clinical environments. In this study students were a shared 'resource' to knowledge gaps through explanation and clarification of points, demonstrations and sharing and signposting of external resources. They facilitated integration into medical culture for example through language learning and provided generalised 'support' through a variety of locations including side rooms and the university library (Morris et al., 2024). This is a reminder that the social context for peer-learning on clinical placements includes engagement in non-clinical as well as social areas (Morris et al., 2024, Bransen et al., 2022, Raat et al., 2010, Keren et al., 2020, Hommes et al., 2012, Woolf et al., 2012, McNeill et al., 2014, Lovell, 2015,

Zaidi et al., 2012). A more detailed account of medical students' peer learning in the context of their social networks is described in Chapter 9.

2.9.6 PAL as part of a teaching and learning intervention during clinical placements.

Finally, a number of studies examine PAL in the context of a formal intervention within clinical placements (Zaidi et al., 2012, Bennett et al., 2015, Masters et al., 2013). Representing a move away from organic workplace-based learning, this literature will not be addressed in detail. Firstly, peer relations were socially complex. There was a concern that friendships could be a distraction for learning (Zaidi et al., 2012), and also a reluctance to give negative feedback that might compromise an existing relationship or connection (Bennett et al., 2015). There was also evidence of competition between peers (Masters et al., 2013, Bennett et al., 2015, Almaiiri et al., 2021, Zgheib et al., 2020) resonating with the work of Chou and Tai (Chou et al., 2014, Tai et al., 2014) and discord over inequitable engagement in peer activities (Bennett et al., 2015). Relationships or interactions with staff members or experts were in some cases prioritised over peers (Bennett et al., 2015), with advice shared about how to optimise relationships with staff members (Zaidi et al., 2012, Masters et al., 2013). Paralleling Chou et al's survey findings (Chou et al., 2014), other subjects under peer discussion included how to navigate workplace environments, including logistics, resources, patient interaction, learning strategies, workplace culture and managing wellbeing (Zaidi et al., 2012, Masters et al., 2013). There was a particular emphasis on exam-based learning within sessions (Masters et al., 2013, Bennett et al., 2015). The differences between individuals in peer groups was also highlighted (Bennett et al., 2015), noting the ability of some peers to inspire change in group behaviours and promote engagement with opportunities on clinical placement (Zaidi et al., 2012). This finding was also mirrored in Dornan's work which is described in more detail in the above section (2.3) as well as the demotivating influence of peers (Dornan et al., 2007).

2.9.7 Conclusion

In conclusion, there is a paucity of literature addressing informal organic workplace-based peer learning. Peer-learning during clinical placements appears to be frequent, diverse and spanning a wide range of locations. The nature of peer-learning is guided by complex social interactions which can be both collaborative and competitive. Students can favour staff interactions and mediation over peer relationships. There is a breadth of subject matter for peer-learning spanning from managing the socio-cultural dimensions of clinical workplaces, to practical logistics and knowledge transfer. A focus on exam learning and assessment was emphasised. On the other hand, holistic practices of workplace engagement were promoted by innovative student leaders who were seen to inspire the peer groups within which they were situated.

2.10 Conclusion

Workplace learning theories provide a vantage through which the study phenomenon can be contextualised. However, consistent with the chosen study methodology, this investigation adopted an 'atheoretical' approach to the phenomenon of interest, with the intention of inductively developing a conceptual model. This will be discussed in more detail in the subsequent chapter addressing Methodology and Methods.

The nature of the research question has necessitated a broad review of the literature. Understanding processes of medical student learning on clinical placement was foundational. However, there were several key papers within the literature review (Dornan et al., 2007, Hagg-Martinell et al., 2017, Liljedahl et al., 2017, Pearson and Lucas, 2011) that did not provide a comprehensive account of engagement with clinical placement learning from the perspective of individual medical students. This was due to either methodological processes/ limitations or deficiencies in thematic development.

Thus, to develop an understanding of the moment-by-moment influences on medical student learning on clinical placements the broader literature was consulted. Relevant works included those addressing the medical student's role, experience and values, the influence of contextual features within clinical environments and students' utilisation of time and engagement with opportunity.

The literature addressing the latter concepts was particularly pertinent due to the investigation's focus on individuals' patterns of behaviour during clinical placements. However, many of the studies were conducted decades ago, thus putting into question their current relevance given recent significant advances in medical education indicating the need for an updated review of medical student behaviour during clinical placement.

Furthermore, the literature addressing the hidden curriculum, peer assisted learning and self-directed and self-regulated learning in relation to clinical placements was also consulted as these phenomena were considered key 'processes' underlying student decision-making core to the study phenomenon. This constituted an overwhelming body of literature spanning simple evaluation studies, literature reviews and robust primary research studies. Within these works, many relevant factors and processes influencing medical student engagement with learning opportunities were described. However, often these were presented as disparate concepts or described incidentally to a study's overall focus, for example 'self-directed learning'. Being constrained by focussing on a particular educational concept was considered problematic as it impeded the ability of the reader to easily grasp the relevant factors with respect to the study phenomenon. Overall, these findings constitute not so much a 'gap' in the literature, but an imperative to collate, interpret and inter-relate concepts to address the study aim. Furthermore, in doing so, this literature review has highlighted phenomena which are under-developed, and areas where further research is indicated.

To conclude, this chapter has laid the foundation in bringing together relevant concepts in relation to the determinants of student learning during workplace learning and how these are associated with the pervasive problem of variable student engagement on placement. The literature synthesis presented in this chapter highlights the need for a timely study which examines student involvement with activity ('engagement') and their agency in the process ('navigation') from the perspective of individual students. In particular, an under-developed area of understanding is the moment-by-moment factors underpinning student participation and how these are inter-linked, recognising that these may be reactive and unconscious. The following chapter outlines how this

investigation was designed to address this need and the philosophical underpinning of the study design.

3. Chapter 3 - Methodology and Methods Overview

3.1 Theoretical Approach

3.1.1 Introduction

The following chapter describes the guiding set of beliefs informing the study design, also known as the research 'paradigm' or 'world view' (Guba, 1990a, Sarantakos, 1994). Aligning with Crotty's pragmatic stance that the research problem is the starting point for determining philosophical assumptions and theorising, the first step will be to describe how the study phenomenon is conceptualised (Crotty, 1998c). The design and nature of the research inquiry will then be related to the theoretical perspectives of what is 'knowable' (ontology), and how this can come to be known (epistemology) (Guba, 1990a, Bunniss and Kelly, 2010). Finally, the research methodology will be described in relation to how such 'knowledge' can be uncovered in relation to the study phenomenon (Guba, 1990a). This justification for decisions regarding the latter will be described in more detail later in the chapter.

3.1.2 Conceptualising the phenomenon

The relationship between the investigator and the research problem is fundamental to determining the research stance (Crotty, 1998c). Accordingly, a distinction is drawn between theoretical conundrums conceptualised by researchers in the 'library' and problems identified through engagement in the 'field' (Glaser and Strauss, 1967). These origins align with specific research perspectives and their associated quality criteria (Greene, 1990, Lincoln, 1990, Marshall, 1990).

The conceptualisation of the study 'problem' emerged from the principal investigator's experience of clinical practice as a medical student, practising doctor and medical educator. In this way, the study phenomenon was developed in the 'field' and remained firmly rooted in practice (Greene, 1990, Glaser and Strauss, 1967). The imperative to understand the learnt experience of medical students engaging variably with opportunities in clinical practice presented the significant 'why' question. This was particularly pertinent where the factors

determining this behaviour were not immediately apparent and the consequences to learning potentially significant.

Traditionally medicine operates within the scientific sphere where problems are external to the investigator and the purpose of research is to control variables and limit outside influences to uncover objective truth (Kneebone, 2002, Cleland and Durning, 2015). However, this vantage was at odds with how the research phenomenon was encountered in practice, suggesting the need for an alternative paradigm. Firstly, medical student differential engagement with learning opportunities is considered a facet of the diversity and complexity of human behaviour and thus not easily understood through reductionist approaches. Moreover, the nature of decision-making appeared highly contextually specific and was subject to subtle cultural shifts as well as a myriad of other local factors. Subsequently, trying to isolate and control 'variables' was considered not only impossible but counter-productive to understanding the phenomenon in question. Finally, though medical training emphasises propositional knowledge and the acquisition of facts (Kneebone, 2002), undeniably the professional practice of medicine is reliant on knowledge which is tacitly learnt and held (Eraut, 1994, Billet, 2010, Eraut, 2010b). Thus, it was considered that many facets of the phenomenon may be unobservable and known only through relating with participants and building a shared perception of their role and reality (Lincoln, 1990, Greene, 1990). Furthermore, through this dialogue, it was considered inevitable that the life experience of the principal investigator would shape the infrastructure of the reality constructed (Lincoln, 1990, Greene, 1990, Lincoln et al., 2018). Thus, isolating the researcher from the phenomenon was considered not only unfeasible but undesirable (Lincoln et al., 2018).

3.1.3 Research stance

From this vantage, the paradigm most aligned with the understanding of the study phenomenon is that of social constructivism, closely related to interpretivism (Bunniss and Kelly, 2010). This position holds that realities are multiple, and socially constructed (Guba, 1990b). Meaning evolves through social interaction and is not independent of human perception (Crotty, 1998a). From an epistemological perspective, the process of knowledge accumulation is

considered a symbiotic interaction between the researcher and participant, to the extent that they can be considered 'one' (Guba, 1990b). This is also described as 'interactive monism' (Lincoln, 1990). Thus knowledge of the phenomenon is developed through co-construction of a shared understanding between the researcher and the participants establishing a common reality (Lincoln et al., 2018).

Finally, of note, on social constructionism (Gergen, 2015). This phenomenon has a different historical basis and conceptual framework to social constructivism (Smith, 2006). However, these terms are often used interchangeably (Gergen and Gergen, 2008). This thesis recognises the distinction between these perspectives: namely social constructivism emphasises the meanings created through individual perception, whereas social constructionism emphasises the social processes behind meaning-making and, in particular recognises, the role of culture (Crotty, 1998a). However, where both social and individual processes are considered of equal importance of the study phenomenon, this investigation can therefore be considered to incorporate both stances, as has become more common in modern practice (Gergen and Gergen, 2008).

3.1.4 Choosing the methodology

The fluidity and adaptability of methodologies that were traditionally aligned with a particular paradigm is increasingly recognised (Crotty, 1998c, Lincoln et al., 2018). Thus, the options for establishing the 'knowledge' of the study phenomenon were potentially vast. However, the following section will describe the choice of methodology for this investigation through outlining the decision-making processes around the benefits and disadvantages of key methodologies traditionally associated with an interpretivist/social constructivist perspective.

Firstly, the investigation chose not to adopt the methodology of a phenomenological inquiry. Inherently problematic and common to the various phenomenological approaches is the focus on an 'event' and exploring individual interpretations of this (Crotty, 1998b, Creswell and Poth, 2018, Neubauer et al., 2019). This was counter to the perspective of how the study phenomenon was conceptualised as a social process, irrevocably entangled with human interactions and cultural determinants (Lincoln, 1990). Moreover, the traditional

phenomenological stance advocates the need to 'transcend' the human experience to grasp the true meaning of the event and that researchers should remove or 'bracket' themselves from the process (Moustakas, 1994, Neubauer et al., 2019). This is at odds with the previously described perspective that the collective human experience *constitutes* the phenomenon and that the researcher symbiotically co-constructs meaning with the participant (Lincoln et al., 2018).

Ethnography offered an alternative methodology which does attend to the cultural and social aspect of the phenomenon. This methodology is multi-faceted, but at its core involves close observation of a population in a particular social circumstance, in order to understand human behaviour from the perspective of the participant (Hammersley and Atkinson, 2007, Robson and McCartan, 2016a). Often this strategy is inclusive of interviews with participants (Hammersley and Atkinson, 2007). Resonating with symbolic interactionism, observation of participants in the social setting was considered advantageous in understanding of the phenomenon (Crotty, 1998b). However, the disadvantage of an ethnographic approach is the focus on one population in one setting which may miss elements of the phenomenon which transcend 'microcultures' of specific environments or social groupings.

Contrastingly, the case study methodology offered an approach which seeks to develop an understanding of a phenomenon through in-depth exploration of a number of examples which are brought together through the process of triangulation (Stake, 1995, Thomas and Myers, 2015). Drawing from this approach, this investigation followed a strategy of diversifying sample and setting to facilitate co-construction of a unified understanding of the phenomenon through a process of crystallisation (Cheek et al., 2018, Ellingson, 2009, Richardson, 2000). However, case-study methodology lacks a process for dynamic discovery, flexibility and following the 'leads' pointing to the phenomenon. Given the amorphous nature of the problem an iterative approach, and pursuit of the concepts and processes which appeared most elucidative was considered most fitting.

This leads to discussion of the chosen methodology which was that of constructivist grounded theory (Charmaz, 2006). Common to all types of

grounded theory is the process of engaging with social phenomena 'in the field' to develop a unifying theory derived directly from the 'data' rather than pre-conceived hypotheses (Bryant and Charmaz, 2007b). In other terms, as Charmaz describes, grounded theory can answer the 'why' question, whereas other types of qualitative research may only address the 'how' or 'what' (Charmaz, 2008). This approach resonated with the conceptualisation of the phenomenon which was rooted in practice (or 'the field') and primarily constituted a 'why' question. Grounded theory also requires the adaptive and iterative approach to data collection considered necessary to develop an understanding of the phenomenon (Schwandt, 1990). However, where traditional grounded theory adopts a more 'positivist' stance focused on objective truth (Glaser and Strauss, 1967), Charmaz's constructivist approach was selected for its alignment with a social constructivist perspective (Charmaz, 2006). The following section will describe this chosen methodology in more detail.

3.2 Methodology

3.2.1 Theoretical perspectives within grounded theory

Grounded theory method was developed in the 1960s as an expression of four foundation texts by founders Glaser and Strauss (Glaser and Strauss, 1967, Glaser and Strauss, 1965, Glaser and Strauss, 1968, Glaser and Strauss, 1971), though often only one is referenced (Bryant and Charmaz, 2007a, Glaser and Strauss, 1967). It was borne out of a desire to build systematicity, rigour, replicability and transparency to qualitative research to earn it the same respect in the scientific community as quantitative research (Glaser and Strauss, 1967, Bryant and Charmaz, 2007a, Charmaz and Thornberg, 2020). From this perspective it is widely considered to have adopted a more 'positivist' stance in the attempt to uncover objective truth (Birks and Mills, 2011, Bryant and Charmaz, 2007a, Charmaz and Thornberg, 2020, Charmaz, 2006). Indeed, within Glaser and Strauss's revolutionary principles was a focus on developing new theory from data, rather than testing existing hypothesis or verifying theory (Glaser and Strauss, 1967). Thus, an oft-quoted key tenet of grounded theory method is that theory 'emerges' from data – an aphorism which has been deconstructed in more modern evolutions of the theory (Glaser and Strauss,

1967, Bryant and Charmaz, 2007a). Indeed, critiques of Glaser and Strauss's early text and those produced by other first generation grounded theorists (Glaser and Strauss, 1967, Strauss and Corbin, 1990) include the absence of 'methodology' or expression of the guiding principles behind the design that lead to the method (Bryant and Charmaz, 2007a, Charmaz and Thornberg, 2020).

Second generation grounded theorists have since evolved grounded theory to incorporate a range of theoretical underpinnings (Bryant and Charmaz, 2007a, Birks and Mills, 2011, Charmaz and Thornberg, 2020, Charmaz, 2006).

Therefore, 'Grounded Theory Method' (GTM) has now come to be understood as a set of essential methods which should be adopted if a work is to meet this remit and there exists a range of grounded theory methodologies to choose from (Birks and Mills, 2011, Bryant and Charmaz, 2007a, Charmaz and Thornberg, 2020).

Key examples include Clarke's grounded theory using situational analysis which has roots in pragmatism (Clarke, 2005) and Charmaz's constructivist grounded theory which approaches grounded theory from the perspective of social constructivism (Charmaz, 2006). The latter has been adopted for this investigation as it aligns with the ontological understanding of the phenomenon as outlined in the previous section. The following section describes how this study followed the principles of constructivist grounded theory, and indeed the core principles of the Grounded Theory Method.

3.2.2 Constructivist Grounded Theory – process overview

The purpose of employing grounded theory methods is the generation of novel theory (Glaser and Strauss, 1967), put more broadly in Charmaz's terms as means of learning "what our research participants' lives are like", page 2 (Charmaz, 2006). It is from this vantage that the overall aim for this investigation was developed, with an intention to develop novel understanding of the processes underlying the phenomenon (Birks and Mills, 2011).

Charmaz encourages flexibility in the approach to gather rich data to meet the study aim (Charmaz, 2006). One such flexibility is the option to collect and analyse data concurrently and to let the research direction follow emerging conceptual leads (Charmaz, 2006). Indeed, this inductive and iterative approach is a foundational principal of grounded theory methodology (Charmaz, 2006,

Glaser and Strauss, 1967, Birks and Mills, 2011, Bryant and Charmaz, 2007b). Accordingly, the design for this investigation was subject to constant review, and a fluidity in the strategy adopted as expressed in serial amendments over the course of the study.

In keeping with concurrent data collection and analysis is the principle that the sampling of participants should be strategically driven by the process of theory generation, and specifically the concepts emerging from analysis that point to the need for further development or investigation (Birks and Mills, 2011, Glaser and Strauss, 1967). Charmaz describes this 'theoretical sampling' as the process of sampling to develop categories of analysis until no new properties emerge (Charmaz, 2006). Contrastingly, the first sample is described as the 'initial' sample which is selected according to the research objectives (Charmaz, 2006). Consistent with these principles, the investigation began with an initial sample where participants were selected according to their characteristics thought to be relevant to the study by the investigator, a 'purposive' sample' (Robson and McCartan, 2016b). Additional participants were then recruited according to what was required to develop emerging theory with subjects selected sequentially in an iterative manner (Bryman, 2016).

With respect to data collection methods, Charmaz offers a more critical perspective to Glaser who emphasises the primacy of data as produced and is less attendant to the process of how it is gathered (Glaser and Strauss, 1967, Bryant and Charmaz, 2007a, Charmaz, 2006). From this vantage, what the researcher comes to know about the phenomenon will be influenced by the lens(es) selected to view it from (Charmaz, 2006). Selection of methods should therefore correspond to the nature of the research problem, recognising that in some cases multiple strategies may be appropriate (Charmaz, 2006).

Consequently, the data collection methods selected by this study were diverse and used dynamically according to the emerging research phenomenon.

Consistent with the practice of 'crystallisation', multiple strategies of understanding the phenomenon are adopted with the purpose of understanding the depth and complexity of the problem from multiple vantages. Questionnaire and survey data were utilised in conjunction with interviews and focus groups in order to contextualise the phenomenon and appreciate it from different

perspectives (Ellingson, 2009, Richardson, 2000). Moreover, multiple genres of creative expression were utilised. Within the focus groups participants were encouraged to represent their experiences with pictures, an animation was used as an ice-breaker, and the process of diagrammatic elicitation utilised as part of member-reflection (Ellingson, 2009, Sahakyan, 2023).

Also critical to the process of data collection in grounded theory method is the concept of 'theoretical sensitivity'. This takes heed of an investigator's personal and intellectual experience with respect to the study phenomenon and how they position themselves according to it (Glaser and Strauss, 1967, Birks and Mills, 2011). According to original grounded theory methodology, the investigator should have sufficient foundational knowledge to attend to relevant data as it emerges, but should avoid collecting and responding to data according to pre-conceived ideas or the theories of others (Glaser and Strauss, 1967). Consequentially, it is suggested that the literature review is delayed until after data collection (Glaser and Strauss, 1967, Charmaz, 2006). Subsequent theorists have adopted a more pragmatic consideration of the extent to which a researcher can address data collection with a blank cognitive landscape, bringing as they will knowledge and understanding derived from their own experiences which are not easily ignored (Corbin et al., 2008, Strubing, 2007). Charmaz and other post-modernist theorists also convey an appreciation that inherent to the dominant processes underpinning formal research, are also the requirements to produce comprehensive literature reviews as part of project approval, ethics, and funding applications (Bryant and Charmaz, 2007a, Charmaz, 2006). Respecting these theoretical and practical insights, this investigation was designed to begin with a broad background literature review to sensitise the investigator to important concepts, whilst delaying the formal focused systematic literature until after data collection was complete. The principal investigator also spent time 'in the field' in the process of designing this study, through observations in an acute medical ward. In this way the research investigation remained firmly rooted in practice, as advocated for according to original grounded theory method (Glaser and Strauss, 1967).

One way that 'reflexivity' as an investigator was maintained was through the process of memo writing. This process of the researcher keeping written records

of their thinking during the process of research is a key tenet of Grounded Theory Method (Birks and Mills, 2011, Bryant and Charmaz, 2007b, Glaser and Strauss, 1967). Charmaz refers to these as 'informal analytic notes', page 72 (Charmaz, 2006) which is an important element of data analysis concurrent with data collection as previously described. An example of a memo written during this investigation is included below:

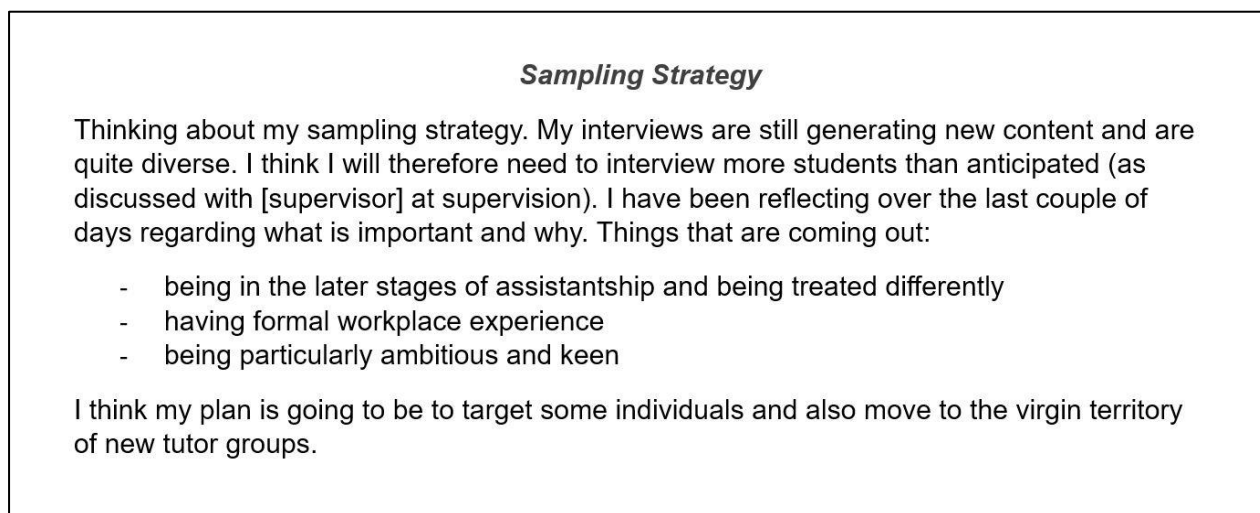


Figure 2: Memo written 5.5.2020 during the Year 5 interviews

Finally, the process of analysis broadly followed the constant-comparative method consistent with grounded theory methodology (Birks and Mills, 2011, Bryant and Charmaz, 2007b). Minor flexibilities and adaptations were adopted as advocated by Charmaz where it was thought necessary to progress the evolution of theory and in particular in formulating the final conceptual map (Charmaz, 2006). Indeed, as indicated by Stern, analysis is an individual process which in some way reflects the analytic processing manner of the individual (Stern, 2007). Coding was initially undertaken line-by-line in an 'open' manner, with in-vivo codes utilised where appropriate (Birks and Mills, 2011, Glaser and Strauss, 1967, Charmaz, 2006). Focused coding then condensed initial codes according to the most appropriate conceptual category (Charmaz, 2006). Axial coding was then used to build major categories by relating categories to sub-categories (Charmaz, 2006). Where relevant 'theoretical codes' were developed as over-arching categories which ultimately were mapped onto the final conceptual model. An extract of initial line-by-line coding is included in the figure below:

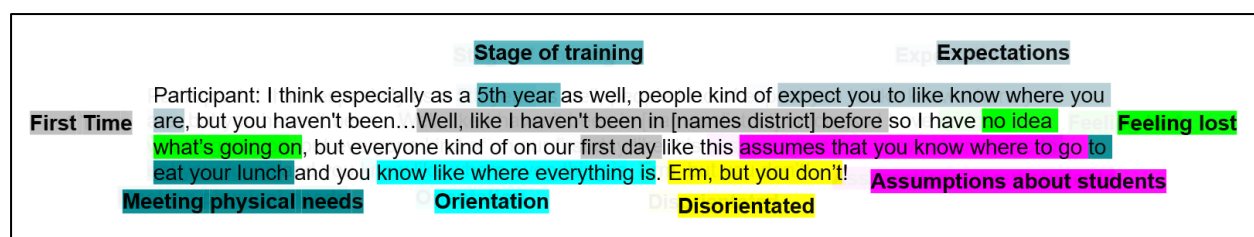


Figure 3: Extract of initial open coding of focus group transcript including use of in-vivo codes

To illustrate how analysis progressed, we can examine the example of the initial code 'feeling lost'. This was then incorporated into a focused code, 'experiencing lost and found' alongside other open codes for example 'being physically directed', 'navigation help' and 'first time'. 'Experiencing lost and found' was subsequently included into the axial code 'navigation from lost to found', alongside 'context – lost', 'knowledge – navigation' and 'norms and structure 'navigation'. This structure ultimately became part of the overarching theoretical code 'managing the entry phase' which is represented in synthesis in Chapter 7.

At each stage the analysis followed 'comparative method' where data were compared to find similarities and differences between codes, incidents and categories (Charmaz, 2006, Birks and Mills, 2011). Coding and analysis was completed by hand and with the support of the analysis software Nvivo (version 13.1.2) Ultimately, the codes were drawn into an over-arching conceptual map, which was the aim of the study. The use of diagrams as part of grounded theory is contentious (Bryant and Charmaz, 2007b), but this investigation holds that they are valuable for expression of ideas so long as they are adequately explained.

3.3 Data Generation

The following section addresses the approach to data collection with respect to the study methodology of constructivist grounded theory as outlined above (Charmaz, 2006). As per traditional grounded theory and the aforementioned principles of crystallisation (Ellingson, 2009, Richardson, 2000), no distinction was made between 'quantitative' and 'qualitative' methods (Glaser and Strauss, 1967). The research 'problem' was considered the starting point for the choice of methods, respecting the importance of first adopting a general lens, before focusing on particular points (Charmaz, 2006). Significant consideration was given to choosing the most appropriate method for data generation, recognising

that the tools employed may influence the quality of data and hence critically the quality of the overall study (Charmaz, 2006).

From this vantage, the starting point for data collection was chosen as in-depth semi-structured interviews. Indeed, interviews have been the dominant mode of data collection for grounded theorists, and in particular are valued by those adopting an interpretivist approach as it provides a means to explore a topic in-depth from the participants' perspective (Birks and Mills, 2011, Charmaz, 2006). A topic guide comprising of a few open-ended questions was used to guide the interviews as a starting point from which further leads could be pursued. This is advocated by Charmaz as a means of avoiding closed-questions and subjective enquiry (Charmaz, 2006) and is recognised as a tool for promoting in-depth participant reflection (Bryman, 2016).

Additionally, Charmaz stresses the importance of taking a broad enough view to be able to contextualise data (Charmaz, 2006). For this reason, two other mechanisms were employed. Firstly, all research participants were asked to complete a questionnaire providing information on their personal demographics (see Appendix E). This also served to promote multivocality of the research process, respecting the differences that may stem from cultural differences and the importance of representing and understanding divergences of opinion (Tracy, 2010). Secondly, a pre-interview questionnaire was utilised as both an interview device and to provide contextual descriptive data on the 'architecture' of a typical student day on placement. This is described in more detail in Chapter 4.

Finally, focus groups with students were deployed as a supplementary source of data, as informed by the evolving needs of the study in order to develop theory respecting pragmatic restrictions (Birks and Mills, 2011) (see also Appendix A). The focus group format was selected in order to appreciate the collective understanding of the study phenomenon given the inherent emphasis on social processes from the vantage of social constructivism and the emerging relevance of peer-interactions established in interview interactions (Bryman, 2016, Bunniss and Kelly, 2010). One phase of focus groups focused on "member-reflections". This is a process through which the study findings are shared with participants in order to start dialogue which can both challenge, affirm and develop the data

analysis and research outputs as part of a reflexive approach (Tracy, 2010, Olmos-Vega et al., 2022). This practice is increasingly promoted as a means to promote the credibility of studies as an alternative to ‘member-checking’ which inherently suggests the existence of an ‘objective truth’ and is therefore counter to interpretivist ontologies (Guba, 1990a, Tracy, 2010, Tracy and Hinrichs, 2017, Candela, 2019, Angen, 2000, Olmos-Vega et al., 2022).

3.4 Remote and online data collection methods – a note

With the advent of the COVID-19 pandemic, a move towards remote and online methods of data collection were necessitated (see Appendix A). Although required for practical reasons, this adaption was adopted critically, both through review of the literature and through a post-participation online survey conducted as part of the investigation (Appendix C). The latter was necessitated due to the fast-paced change in video-conference practices and lack of up-to-date research in the field (Osborne et al., 2023). This work was presented at an international medical education conference (Osborne et al., 2021)(Appendix C) and ultimately published in a peer-reviewed journal (Osborne et al., 2023)(Appendix D).

Elements of the study design modified to incorporate the transition to online methods included the reduced size of focus groups (Lobe, 2017, Osborne et al., 2023); structuring of participant-facing interactions to feature visual aids and more regular ‘breaks’ (Pacheco, 2020, Khan et al., 2021, Smeraglio et al., 2020); advocating ‘cameras on’ during interactions (Abrams et al., 2014); and adjustments to interviewer conduct such as attending to ‘virtual background’ in relation to power-dynamics (Osborne et al., 2023).

3.5 Study Design

Research design and study evolution

Reflecting the iterative and dynamic approach to data collection, after each phase of the study, the aims, research questions and objectives were subject to review. The aim of the study did not change over the course of the investigation. However, the research questions and objectives were modified according to evolving insight into the nature of the phenomena as well as practical restrictions.

3.5.1 Aim:

To develop a conceptual model of the inter-related processes underlying medical students' decisions to engage with learning opportunities during clinical placements.

3.5.2 Research Questions:

- What are the inter-related processes relevant to medical students' implicit and explicit decision-making in relation to how they engage with informal and formal learning opportunities during clinical placements?
- How may medical students' patterns of behaviour during clinical placements impact upon their experiences of learning in clinical environments?

3.5.3 Research Objectives

The following section describes the evolution of the research objectives over the course of the investigation and the rationale. A substantial revision was made after the end of Phase B, the first phase of participant-based data collection. This period marked a significant turning point in the research project for two reasons. Firstly, the opportunity to analyse primary data in relation to the phenomenon sparked significant insights relating to conceptual development, further emphasising the importance of the social and environmental context to decision-making. Secondly, the COVID-19 pandemic restricted face to face engagement with participants, necessitating a move to remote methods.

Considering the former, analysis of the participants' responses highlighted the prominence of the clinical placement atmosphere and conditions in influencing decision-making. Peer-influences were also a dominant feature and developing an understanding of the group dynamics appeared imperative. An additional objective was drafted to address this:

Additional Objective (3): To explore medical students' interpretations of what are perceived to be significant contextual dynamics influencing how they approach and experience clinical placements in order to develop an

understanding of the relationship between context and student engagement during clinical placements.

This objective also incorporated examination of the contextual changes relating to the evolving COVID-19 pandemic.

Additionally, considering the practical implications of data collection during the COVID-19 pandemic, one of the objectives was no longer achievable due to its requirement to observe students in clinical environments:

Objective 4: To observe medical student behaviour during clinical placements to establish any direct and indirect consequences to their learning resulting from patterns of behaviour and facilitate exploration of decision making 'in the moment'.

This objective was revised in a manner which retained the original intent but modified the process according to the restrictions of the available data collection strategies.

Revised Objective 4: To assimilate medical students' accounts of the activities they undertake during clinical placements in order to discern any patterns of behaviour and how these relate to learning during clinical placements.

The final research objectives for the study were then as follows:

1. To synthesise and critically appraise the existing literature regarding workplace learning, decision-making and professional development in order to provide context and justification for the investigation as well as to ensure theoretical sensitisation to relevant concepts.
2. To explore medical students' experiences during clinical placements with a focus on student engagement with different learning opportunities and factors influencing their explicit and implicit decision-making processes.
3. To assimilate medical students' accounts of the activities they undertake during clinical placements in order to discern any patterns of behaviour and how these relate to learning during clinical placements.

4. To explore medical students' interpretations of what are perceived to be significant contextual dynamics influencing how they approach and experience clinical placements in order to develop an understanding of the relationship between context and student engagement during clinical placements.
5. To establish the inter-related processes common to medical students' decision making in relation to engagement with learning opportunities, paying attention to individual motivation, emotion, peer influences, workplace features and curricula influences.

A full description of changes to the study protocol is included in Appendix A.

3.6 Mapping the objectives to the research design

The study progressed through five overlapping phases in order to meet the research objectives. Phases A and E involved broad and focused reviews of the literature respectively. Phases B through D employed a range of data collection methods involving medical students, the principal study population. Four samples of students were recruited at Year 3 and Year 5 of undergraduate medical training from one hospital site over a 15 month period. A map of the overall design is included below (Figure 4). Each phase will briefly be reviewed in turn and mapped to the corresponding research objectives.

Study Design: Exploring medical student engagement with clinical placements

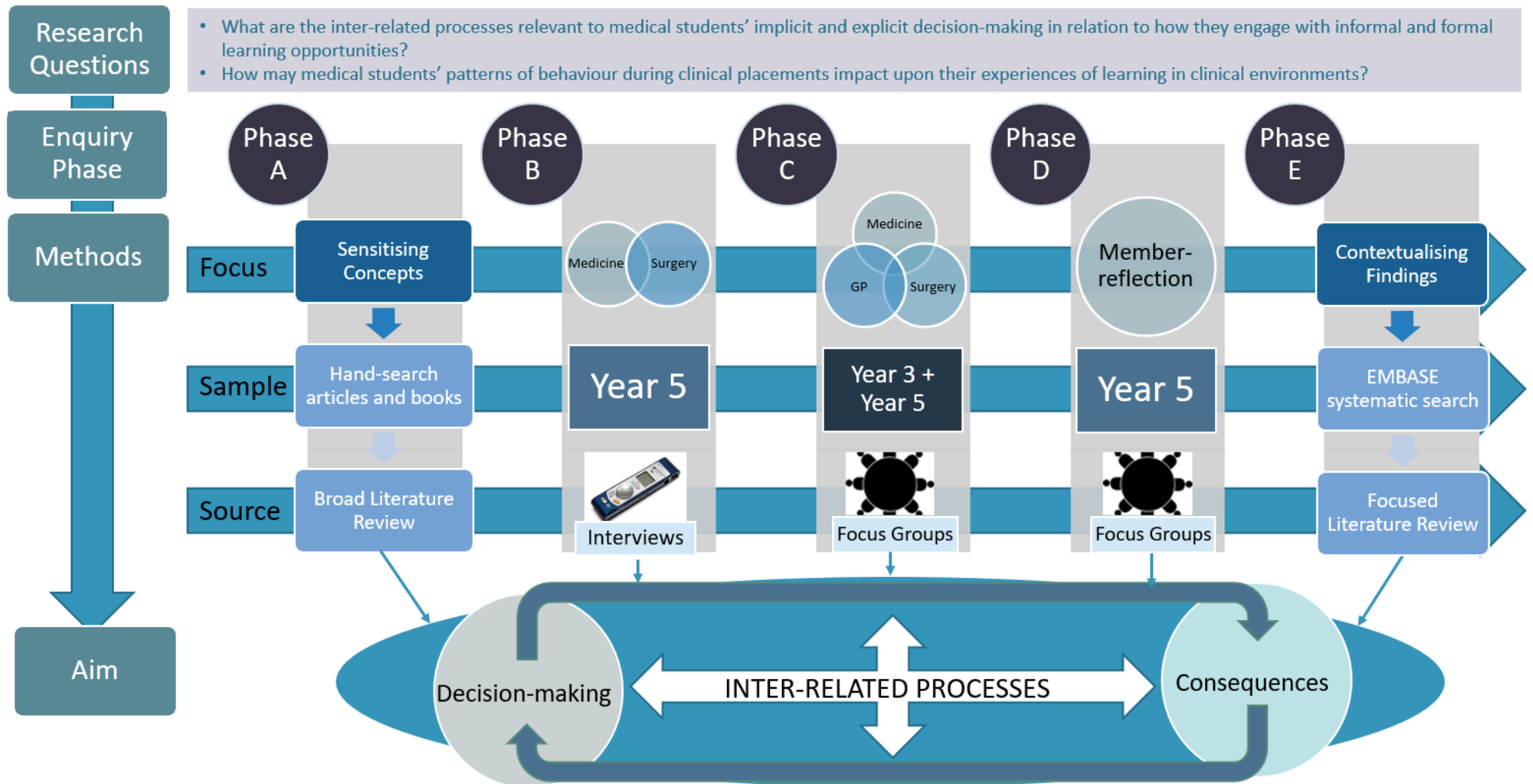


Figure 4: Overall study design

Figure 4 Legend: The research questions are described at the top of the diagram. The figure below represents the five phases of the study from A to E along the horizontal axis. Along the vertical axis the different methods used in each phase are outlined. At the bottom, the overall study aim is represented by the figure which demonstrates how different inter-related processes underlying decision-making are associated with student patterns of behaviour.

3.6.1 Phase A: Background literature review (Chapter 2)

Key research objectives addressed:

- Objective One: To synthesise and critically appraise the existing literature regarding workplace learning, decision-making and professional development in order to provide context and justification for the investigation as well as to ensure theoretical sensitisation to relevant concepts.

The first phase of the investigation involved reviewing and critically appraising the literature in the spheres relevant to the investigation, particularly workplace learning, decision making and professional development. The purpose of this literature review was to identify important sensitising concepts prior to data collection and map the theoretical landscape in order to provide context and justification for any conceptual models arising from the investigation (Charmaz, 2006, Glaser and Strauss, 1967). This reading informed the synthesis of the body of work and discussion in Chapter 2.

3.6.2 Phase B: Semi-structured interviews and questionnaire with Year 5 students (Chapter 4, 5 and 6)

Key research objectives addressed:

- Objective Two: To explore medical students' experiences during clinical placements with a focus on student engagement with different learning opportunities and factors influencing their explicit and implicit decision-making processes.
- Objective Three: To assimilate medical students' accounts of the activities they undertake during clinical placements in order to discern any patterns of behaviour and how these relate to learning during clinical placements.

Data collection in the second phase of the investigation combined a pre-interview questionnaire and semi-structured interviews with a sample of 18 Year 5 students. Due to the emerging COVID-19 pandemic, four of these interviews were conducted remotely. Three were fulfilled via video-conference, one by telephone.

3.6.3 Phase C: Focus groups with Year 3 and Year 5 students (Chapter 7)

Key research objectives addressed:

- Objective Four: To explore medical students' interpretations of what are perceived to be significant contextual dynamics influencing how they approach and experience clinical placements in order to develop an understanding of the relationship between context and student engagement during clinical placements.

Data collection in this third phase of the investigation utilised remote online videoconference focus groups with Year 3 and Year 5 medical students. The timing of the focus groups coincided with the students' return to clinical placements, after a period of significant disruption due to the COVID-19 pandemic. The purpose of this phase of data collection was to explore medical students' interpretations of how the setting and circumstance of clinical placements influence their experience of clinical placements and more specifically their engagement with learning opportunities. Additionally, it was intended that this phase could provide an appreciation of the socio-cultural context of the medical student's learning environment and in particular peer-to-peer relations that were highlighted as significant process underlying decision making in Phase B.

3.6.4 Phase D: Focus groups with Year 5 students (Chapter 8)

Key research objectives addressed:

- Objective Five: To establish the inter-related processes common to medical students' decision making in relation to engagement with learning opportunities, paying attention to individual motivation, emotion, peer influences, workplace features and curricula influences.

The fourth phase of the investigation involved two focus groups with groups of 4-6 Year 5 medical students. The focus groups were conducted remotely by videoconference using Microsoft Teams. The purpose was to yield an additional source of data to enrich the main themes and provide an opportunity for promoting 'member-reflection' around the emerging conceptual model (Tracy, 2010, Olmos-Vega et al., 2022). A further intention was to provide an additional indication of the transferability of the study findings by providing a point of comparison with the findings in Phase B – where data was collected from a previous Year 5 student cohort in the same setting a year prior (Tracy, 2010). The sample was partly drawn

from the same cohort of Year 5 students that served as a basis for recruitment for focus groups in Phase C, but involved different students.

3.6.5 Phase E: Focused systematically conducted literature review (Chapter 2)

Key research objectives addressed:

- Objective One: To synthesise and critically appraise the existing literature regarding workplace learning, decision-making and professional development in order to provide context and justification for the investigation as well as to ensure theoretical sensitisation to relevant concepts.
- Objective Five: To establish the inter-related processes common to medical students' decision making in relation to engagement with learning opportunities, paying attention to individual motivation, emotion, peer influences, workplace features and curricula influences.

The sixth phase of the investigation constituted a focused and systematically conducted literature review addressing the question: 'What are the factors which influence medical student engagement with learning opportunities during clinical placements?' This provided insight and context with which the final conceptual model was examined and related to the existing body of work. Due to practical limitations, the search was limited to the database 'EMBASE' which initially identified 5213 articles and was subsequently narrowed through title, abstract and full text screening to 70 articles. A further 24 additional references were identified through a 'snowball' technique of reference and citation screening. A full outline of the process of the focused literature review including the search strategy is included in Appendix F. A synthesis of the findings is represented in Chapter 2.

3.7 Study population and sampling overview

3.7.1 Study setting

The research was conducted at a regional NHS Trust in the North of England, United Kingdom, where the principal investigator was employed as a Teaching Research Fellow for a four year period. All medical student participants were enrolled in a five or six year case-based integrated curriculum at the local city-based university. During the study period, a new curriculum was being rolled out, and so participants recruited

at different stages of training were experiencing programmes with some differences but many similarities. In general, both courses operate on a de-centralised model and students are allocated to different 'base units' for their clinical placements which are made up of one or more NHS Hospital Trusts. Participants involved in the research were based in the Trust for either six months or one year during their Year 3 or Year 5 of training. Participants who were allocated for 6 months had experience of clinical placements at a neighbouring hospital trust. Medical students in Years 1,2 and 4 are also hosted by the Trust but were not included in the study.

The central curriculum is delivered and organised locally within the Trust by NHS staff and dedicated education employees including administration staff, medically trained teaching fellows and nurse lecturers. Students rotate around different departments and hospitals in order to meet their curriculum requirements. The majority of hospital placement experiences are delivered by three district general hospitals within the trust. Two of these hospitals (District General Hospital A and District General Hospital B) provide care on a long-term basis and have limited investigative and acute services. One of the hospitals (Acute Hospital A) provides secondary acute care and a broad range of services. It acts as a feeder hospital into the surrounding District General Hospitals. The focus of the research was students' experiences on clinical placements at these three hospitals listed. Participants will have had experience of other neighbouring hospitals throughout their undergraduate training, and they occasionally referred to these.

3.7.2 Size of sample

Estimation of the sample size of participants for the investigation was required both to inform practical aspects of the study design and to obtain ethical approvals. However, in contrast to quantitative approaches, the nature of qualitative research is inherently exploratory, and therefore it was difficult to establish in advance the exact number of participants required to answer the multi-dimensional aspects of the research question (Baker and Edwards, 2012, Stern, 2007). Furthermore, integral to the sampling strategy was a need for flexibility in order that participants could continue to be sampled until there was sufficient detail and diversity within responses to achieve 'saturation of concepts' (Glaser and Strauss, 1967, Charmaz, 2006).

The approximate anticipated sample sizes for each phase were as follows:

- A) Phase B (questionnaire and semi-structured interviews): 10-20 participants.
- B) Phase C (focus group): 16-36 participants (4-6 focus groups of 4-6 participants)
- C) Phase D (focus group): 8-18 participants (2-3 focus groups of 4-6 participants)

In determining these sample sizes, a judgement was made with regards to what was likely to be adequate, balanced with pragmatic restrictions in practice. The process of arriving at the number of participants in the sample was influenced by the perspective of respected qualitative researchers. There is a recognition within qualitative research that the sample required will depend on the nature of the question and the richness and complexity expected from individual accounts (Baker and Edwards, 2012). A ballpark figure for qualitative interviews is between 12 and 60 (Baker and Edwards, 2012) or between 20 and 30 for grounded theory studies (Stern, 2007). It was estimated that between 10 and 20 interviews in total would be sufficient, as the interviewing technique is designed to explore a narrow area in depth. Additionally, it was expected that data from the interviews would be supplemented by the focus group data, further facilitating conceptual saturation (Malterud et al., 2016).

For remotely conducted synchronous online focus groups, there is variability in the stated ideal sample size (Moore et al., 2015, Fox, 2007). This investigation is following the recent guidance stated by Lobe as a described group size of between 4 and 6, based on her extensive experience in using this method (Lobe, 2017). For the focus groups in Phase C, it was anticipated that between four and six groups would be required to meet the research objectives. This is consistent with guidance in the literature where three to four focus groups are required for cross-group analysis (Stalmeijer et al., 2014) and that between four and five focus groups are recommended if focus groups are a sole data source (Belle, 1999). For the focus groups in Phase E, it was anticipated that fewer focus groups would be required. At this stage approximately two to three groups were anticipated to be sufficient as in this phase the focus groups were being used to enrich data from the preceding phases of the study and provide an opportunity for member-reflection around the emerging conceptual model (Tracy, 2010, Olmos-Vega et al., 2022).

3.7.3 Purposive sampling

Following the principles of purposive sampling, the initial cohort of students invited to participate in the study were selected according to their characteristics considered of relevance to the meeting the study objectives (Charmaz, 2006, Robson and McCartan, 2016b). This included their stage of training and 'demographic features of interest' as outlined below. Furthermore, it was anticipated that as the investigation progressed, previously unconsidered characteristics could emerge and necessitate the tailoring of the sampling strategy to include other groups. This is consistent with the concept of 'theoretical' sampling where participants are selected in order to progress the development of emerging theory through exploring new categories thought to be of importance (Glaser and Strauss, 1967, Charmaz, 2006). The sampling strategy therefore was designed to follow an iterative approach where subjects were sampled sequentially, gradually increasing the study size (Bryman, 2016). Appropriate pathways were designed to invite additional students who had not initially been approached, for this purpose.

The 'demographic features of interest' thought to be of relevance to this study were:

- Gender (male/female)
- Age (variation)
- Nationality (international versus non-international students)
- Ethnicity
- Widening access status
- Experience of study (post-graduate student versus undergraduate student)

These characteristics were selected according to the judgement of the investigator informed by the background literature analysis and the findings from several key studies.

D) *Age and Gender*: Prior investigations have demonstrated that medical students' experience during clinical placements can be influenced by their gender (Kristoffersson et al., 2018, Babaria, 2009). Age and gender have also been found to bear significance regarding decision making processes more generally (Sans de Acedo Lizarraga, 2007). Furthermore, a doctor's age has been found to be an important determinant of intuitive decision making

processes and is therefore of possible relevance to this investigation (Hall, 2002).

- E) *Nationality*: A study of international students in an Irish medical school demonstrated that international students, particularly from the Middle East and Malaysia, experience greater likelihood of cultural and social alienation in the early years of medical school (McGarvey et al., 2015). It is therefore possible that this student group may have unique experiences during clinical placements that influence their decision making, which merits investigation.
- F) *Ethnicity*: Ethnic background is considered important given the attainment gap between students of white and minority ethnic groups and recent evidence that students from minority ethnic groups may be negatively impacted by difficulty in mediating relationships with tutors and clinicians during their clinical years (Vaughan et al., 2015).
- G) *Widening Access Status*: Evidence suggests that medical students from lower social classes can experience marginalisation in part due to difficulty in forming social connections with influential clinicians (Beagan, 2005).
- H) *Experience of study*: 'Post graduate' versus 'undergraduate' status is worth considering due to perceptions within medical education that graduate entry students may function in unique ways when engaging with medical curricula (Price and Wright, 2010).

3.7.4 *Demographics of interest and tutor groups*

For each phase of the study, the practical strategy was to approach an initial small group of students likely to contain a mix of the 'demographic features of interest'. Additionally, all students in a particular year group were informed that research was taking place, to pave the way for inviting additional participants as part of aforementioned approach of theoretical sampling (Charmaz, 2006, Glaser and Strauss, 1967).

The pre-existing 'tutor group' system was used as a basis for recruitment into the initial cohorts in an attempt to achieve a mix of the demographic features of interest previously listed, and to capitalise on existing peer group relationships. This educational system divides students into smaller 'tutor' groups forming the basis of arrangements for classroom and workplace learning situations. These groups are

created by staff members using a significant degree of randomisation, but with adjustments made according to student preferences and an attempt to balance other factors such as logistical restrictions, student gender and prior experience of study. By selecting a tutor group(s) at random to form the initial samples, it was hoped that an appropriate mix of the study characteristics would be achieved.

Given the sensitive nature of these student demographics, it was not possible to have access to these student attributes prior to inviting students into the study. Instead, in order to understand the sample composition in relation to the demographic features of interest, students were invited to complete a voluntary questionnaire at the time of data collection. This was completed either as a paper-based form or an equivalent electronic form immediately prior to participation. Details of the questions are included in Appendix E.

3.7.5 Different stages of training

Students were selected at different stages of training in order to meet specific objectives according to their stage of study. In general terms, Year 3 students were considered likely to provide 'rich' data, because they would be embarking on their first significant clinical placements. It was anticipated that their decision-making processes may be more deliberate and accessible compared to in later stages where behaviours and thought processes may be more embedded and unconscious. Year 5 students, embarking on their final clinical placements as medical students, were considered valuable for exploring a retrospective longitudinal outlook and particularly as to whether the students consider their behaviours to have changed over time. Furthermore, it was anticipated the maturity of Year 5 students and familiarity with the hospital environment could provide additional insight into the study phenomenon. Comparing datum between both stages of training would provide an opportunity for considering if any dissimilarities may be due to maturity of the students or other differences in the peer group. This in turn could provide valuable insight as to the potential transferability of the results (Tracy, 2010).

3.7.6 Placement type

Attention was given to the type of placement under review at the time of data collection, in terms of the hospital site and specialty experienced. This is described in more detail at each phase.

3.7.7 General recruitment strategy

Recruitment across the phases followed a similar pattern with adjustments made according to features of the target sample and contextual restrictions. The design also included safeguards to ensure the students would not feel pressurised by the principal investigator's position as a teaching member of staff. To this effect, rather than contact students directly, all initial communications about the study were sent by an individual impartial to the research process, the Designated Education Administrator (DEA).

As described, certain tutor group(s) were randomly selected to be invited into the initial cohort. These students received an email communication from the DEA (with the relevant Participant Information Sheet (PIS) and consent form. For the phase involving interviews (Phase B) students from tutor groups that were not initially targeted were still informed of the study and information meetings, to lay the foundations for them being invited to participate individually later in the study as part of theoretical sampling. These students also received an email from the DEA with an attached PIS form relevant for the Phase of study. Information meetings were scheduled during the break times of planned educational activities. These took place face-to-face in Phases B and C and online for Phase D. The principal investigator facilitated the meetings which involved giving a brief 5 minute presentation of what the research involved and provision of research paperwork. During the meetings refreshments were provided and there was an opportunity for the students to ask questions. The information meetings were targeted at the randomly selected tutor groups, but were open to all students to attend to learn more about the research if they so desired. At the meetings the students had the option of joining the research database to be contacted with more details about the study. A paper form was used for Phase B and made available at the information meeting. In Phase C and D an electronic version of the form was made available, and students received a link to this in the initial email communications as well as at the information meetings. This

process ensured compliance with European Union General Data Protection Regulations (GDPR) and gave the students an opportunity to provide their preferred contact details and mode of contact (e.g email or by text). The opportunity to use a 'non-university' mode of contact was highlighted in the Phase B pilot as an important mechanism for reassuring students that the study was divorced from the 'medical school' as an authority figure. Arrangements for attending the focus group or interview were made by direct communication from the principal investigator to the students according to their preferred mode of contact.

According to the iterative sampling strategy described, a number of students were invited to participate in the study separate to the tutor-group based system. These students were informed of the study by the DEA by email as above, which included an opportunity to opt out of any further contact about the study. Some of these students attended information meetings. Students who did not attend these meetings but whom had characteristics of interest to the study according to theoretical sampling were directly contacted by the principal investigator using their university email addresses. At this stage they were invited to join the study and the database using the forms described.

Please note that all names used in quotations throughout this thesis are pseudonyms.

3.7.8 Recruitment, reflexivity and the principal investigator's education role

Throughout the recruitment process, the principal investigator attended to the potential consequences of their role as a teaching member of staff and the power differentials that could arise from this. It was unavoidable that some potential participants may have had experience of being taught by the principal investigator prior to commencement of recruitment into a phase of study. To minimise any role conflicts, the investigator did not conduct any teaching with potential participants once recruitment had begun for a phase. They also sought and were granted special dispensation not to participate in formative or summative assessment processes at the study hospitals. Participants were also explicitly informed that the principal investigator would never be involved in their assessment during recruitment and consent processes. Following on from feedback from the pilot studies, it was also

explicitly stressed that no information would be shared with other teaching staff in the education department.

Notwithstanding these measures, the pattern of student rotation and the principal investigator's teaching activities meant that they had different degrees of contact and varying states of relationship with particular students. Some students had not been encountered at all prior to the information meetings. A minority of students were excluded from the study as they were educational supervisees or pastoral tutees of the principal investigator. Throughout the investigation, the principal investigator kept a reflexive account of any preconceptions of the participants, and how existing knowledge of the students may have impacted on recruitment, participation in data collection and processes of analysis.

It was anticipated that students known to the principal investigator through teaching activities were more likely to participate. However, this was not borne out in reality and many participants were students with whom the principal investigator had no prior contact. Of greater significance to participants appeared to be the principal investigator's role as a 'teaching fellow' interested in promoting learning and improving education standards for future students. Generally, the students perceived the principal investigator as non-threatening and 'on their side' as reflected by the nature of their disclosures. Furthermore, the 'insider' position of the principal investigator provided an opportunity for information meetings to be scheduled at times and places of convenience to students, which facilitated the development of rapport and ultimately encouraged participation in the study.

3.8 Ethics application and setting

3.8.1 University and NHS

Research ethics approval was sought from the UK-based Health Research Authority (HRA) via the Integrated Research Application System (IRAS). Northumbria Healthcare NHS Trust acted as the local sponsor. Approval was granted for the initial proposal with no suggested amendments (see Appendix G). Local ethical approval was subsequently granted by the Newcastle University Ethics Board. The project protocol was also reviewed and approved by the School of Medical Education

Research Management Group (RMG) at Newcastle University Medical School, a body which oversees and manages research projects involving medical students.

3.8.2 Approvals and amendments

The study protocol has been amended four times and approved by all the aforementioned relevant bodies (HRA, Local NHS body, Newcastle University Ethics, and School of Medical Education RMG). This was to reflect emerging study needs according to the pursuit of theory development and to account for COVID-19 restrictions. A summary of these changes is included in Appendix A. Of note, a move from face-to-face to remote interviews was also undertaken in the middle of Phase B utilising emergency provisions put in place by the HRA to enable research to continue in the early stages of the COVID-19 pandemic.

3.9 Rigour and Research Trustworthiness

3.9.1 Introduction

Notions of 'quality' in social research is a contested topic (Lincoln and Guba, 2000, Bryman, 2016). Numerous frameworks exist and are applied differently to 'qualitative' and 'quantitative' research (Bryman, 2016). This thesis recognises that in this evolving field, there is a penchant for novel language, with terminology frequently becoming out-dated and revised according to trends within the literature (Lincoln et al., 2018, Morse, 2018, Tracy and Hinrichs, 2017). The following section seeks to address how the study was designed according to selected frameworks, with an emphasis on core principles.

3.9.2 Reliability, replication and validity

Firstly, with respect to the study elements of this investigation that could be considered more 'quantitative' in nature, the principles of 'reliability', 'replication' and 'validity' were considered. In turn, these concepts outline that research should be reliable (repeatable for a stable measure), replicable (procedures and processes and transparent such that they could be carried out again) and valid (measuring what it intends to measure) (Bryman, 2016). Elements of the demographic questionnaire, the post-participation online research methods survey and the pre-interview

questionnaire were designed with these principles in mind. This is reflected in their structure, making use of existing tried and tested tools and questions, for example utilising validated ethnicity questions from the English census questionnaire for the former (ONS, 2021) and the pre-existing Day Reconstruction Questionnaire for the latter (Kahneman, 2004b, Kahneman, 2004a). Moreover, the study protocols and methods have been described in detail in this thesis and in the ethics proposal to ensure transparency.

3.9.3 Trustworthiness and authenticity

With regards to more ‘qualitative’ elements of this investigation, the most widely accepted parallel concepts to reliability, replication and validity are ‘trustworthiness’ and ‘authenticity’ as first established by Guba and Lincoln in 1985 (Bryman, 2016, Lincoln and Guba, 2000, Morse, 2018). ‘Trustworthiness’, refers to research methods; where ‘credibility’ and ‘transferability’ parallel validity, ‘dependability’ parallels reliability and ‘confirmability’ parallels objectivity (Bryman, 2016). ‘Authenticity’, meanwhile refers to the socio-political outcomes and impacts of the research, for example if social groups are fairly represented and how the research is an impetus for social change (Bryman, 2016, Lincoln and Guba, 2000).

Firstly, with respect to credibility, this relates to whether accounts of social reality are trustable, credible and acceptable according to the judgement of those they seek to represent and in relation to the quality of processes (Bryman, 2016, Tracy, 2010). Means of enhancing credibility include seeking diversity in data methods or sources, previously described as ‘triangulation’, but better represented in this work through the aforementioned concept and processes of ‘crystallisation’ (Tracy, 2010, Richardson, 2000, Ellingson, 2009, Varpio et al., 2017). Moreover, engaging in member-reflection such as in Phase D of this study can also increase the credibility of a study (Tracy, 2010, Olmos-Vega et al., 2022).

Secondly, ‘transferability’ refers to whether the research applies to other contexts, which can be facilitated through rich accounts or ‘thick descriptions’ that provide sufficient detail and convey details of local culture, making the implicit explicit (Bryman, 2016, Tracy, 2010, Tracy and Hinrichs, 2017). Time spent in observation in clinical areas, and a focus on implicit phenomena in the study design are elements of this investigation which arguably enhance the transferability (Tracy, 2010).

Thirdly, 'dependability' refers to the robustness in keeping an audit trail of processes (Bryman, 2016) such as those outlined in this chapter. Finally, 'confirmability' relates to the measures taken by the researcher to situate themselves appropriately within the findings, avoiding undue influence of personal values, context or theoretical leanings (Bryman, 2016, Olmos-Vega et al., 2022). With respect to this study, the latter is best appreciated through the lens of 'reflexivity, where the principal investigator engaged methodically in processes which supported personal reflections on their position and how this related to the social world of the participants (Bryman, 2016, Charmaz, 2006). Mechanisms for reflexivity included a critical use of theoretical constructs, memo-writing, and providing a written reflexive account as part of this thesis (Olmos-Vega et al., 2022, Varpio et al., 2017).

3.10 Conclusion

This chapter has outlined the ontology, epistemology and overall methodology of the investigation according to the principles of social constructivism and following a constructivist grounded theory. The aim, research questions and research objectives and how they evolved over time have been described. Subsequently, an overview of the study design has been provided to map how the study phases relate to the research aims and objectives and a description of ethical processes and approvals was outlined. The study sample and setting was described for context and how the principal investigator related to the study participants was outlined in a reflexive account. Finally, the principles of 'quality' were explored with respect to this investigation, particularly how the study design aligns with principles of trustworthiness and authenticity. The following chapters describe the processes of data generation, where further details about the applied methods are provided.

4. Chapter 4 - Phase B Part 1: Modified Day Reconstruction Questionnaire: The Typical Student Day

4.1 Introduction

This chapter introduces the first part of the second phase of the investigation, 'Phase B,' which combines qualitative interviews and a pre-interview questionnaire with Year 5 medical students. The data collection processes for this phase will be elaborated from the methodological outline provided in the preceding chapter. The sampling process and characteristics of the sample will be described in detail.

The chapter will then focus on describing the 'typical student day.' This primarily relates to the questionnaire data but will also include elements of the qualitative interviews where relevant. Meanwhile the primary interview findings will be presented in two parts over the subsequent two chapters (5 and 6) which address the processes underlying student engagement and student patterns of behaviour respectively. All of the findings are cross-referenced in Chapter 9, the over-arching conceptual model.

4.2 Methods

4.2.1 Revisiting objectives

Phase B of the study was designed to answer the study research questions by meeting the following research objectives:

- Objective Two: To explore medical students' experiences during clinical placements with a focus on student engagement with different learning opportunities and factors influencing their explicit and implicit decision-making processes.
- Objective Three: To assimilate medical students' accounts of the activities they undertake during clinical placements in order to discern any patterns of behaviour and how these relate to learning during clinical placements.

As a means of addressing these objectives, the architecture of the student's typical day on clinical placement was constructed to contextualise the findings. This is the focus of this chapter.

4.2.2 Data collection – pre-interview questionnaire

Participants in Year 5 of medical training were invited to complete a questionnaire requiring them to recount their preceding day of clinical placement during their Medicine, Surgery or Assistantship blocks. Questionnaires were completed Tuesday to Friday, reflecting the experience on clinical placement from Monday to Thursday. The questionnaire was structured as a modified version of the Day Reconstruction Method (DRM) tool (Appendix N). Developed by prominent psychologist Daniel Kahneman, the DRM is a survey-based tool with the aim of exploring how individuals spend and experience time (Kahneman, 2004b, Kahneman, 2004a). It is designed to support participants to engage with their experiences of the preceding day through completing a structured account designed to limit recall bias (Kahneman, 2004b, Kahneman, 2004a). The original DRM includes a requirement for each activity to be rated according to their affective state (Kahneman, 2004b). The modifications to the DRM for this study are highlighted in Appendix N. Key changes included narrowing the scope of the questionnaire to only include time spent on placement, a removal of the need to score each element according to their affective state (as this was not the primary study objective) and an adjustment of terminology to reflect participant and patient confidentiality and the potential risks to the participant. The modified DRM (mDRM) was administered to students immediately prior to engagement in the semi-structured interviews and was cross-referenced during interviewing.

4.2.3 Data collection – semi-structured interviews

The recorded interview component of participation in this phase took place following completion of the mDRM questionnaire. A topic guide was utilised in conjunction with the mDRM to facilitate students to provide answers rooted in their current clinical placement (Appendix H). Norms, exceptions to the norms and contrasting phenomena were explored to facilitate co-construction of student experiences and concepts relevant to the study aims. The topic guide also included elements prompted by the background literature review such as self-regulated and self-directed learning and developmental transitions (see Chapter 2). Early pilots and consultations with the supervisory team were used to revise the guide. Additionally, the topic guide was amended throughout the phase according to the iterative approach consistent with constructivist grounded theory (see Chapter 3). Elements

that were added included those relating to habitual behaviour, ‘interesting’ elements, affective states, and the role of contextual dynamics (see Appendix H highlighted sections). Throughout interviewing the topic guide was used flexibly, guided by the participants’ responses to open questions and emerging conceptual development as part of the intended purposive, inductive approach. The recorded component of the interview was designed to take 30-45 minutes. Interviews were initially face-to-face but a transition to remote methods was made at the end of the phase due to restrictions arising from the COVID-19 pandemic (see Appendix A).

4.2.4 Recruitment, sampling and consent

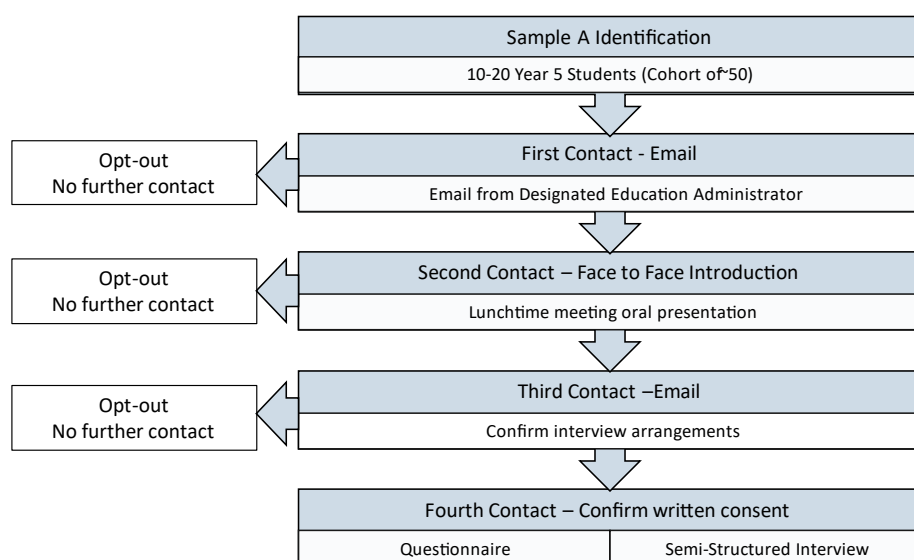


Figure 5: Year 5 sampling overview

Rationale

The participant sample was recruited from a cohort of Year 5 medical students undergoing their final six months of clinical placements in the fields of acute care, general medicine, and general surgery. This included the 5 week ‘Assistantship’ block, which is a special time of clinical placement mandated by the General Medical Council where students are integrated into healthcare teams for a prolonged period and given experience of the hands-on work of a newly qualified doctor (General Medical Council, 2011). The purpose was to begin data collection in a population and

setting that would support broad conceptual development in a cohort who could give retrospective insight across the stages of the curriculum.

Inclusion and exclusion criteria

Inclusion criteria

Participants had to meet the inclusion criteria and none of the exclusion criteria to be considered a participant in the study.

- Stage of training: Medical student at Year 5 of MBBS programme at Newcastle University
- Place of training: Medical student assigned to study 'base-site'
- Relevant experience: Completion of at least 2 weeks of clinical placement within study site at time of interview

Exclusion criteria

- Refusal of consent
- Students allocated to the principal investigator as supervisees
- Students with whom the principal investigator was considered to have a personal relationship

Sampling strategy

Initially one randomly selected tutor group of 15 students taking part in their 'Hospital Based Practice' module was invited. A further tutor group of 15 students was invited part way through the study phase. The rationale was to increase the sample size due to considerable heterogeneity in the data, to support saturation of concepts. In addition, a minority of students were individually invited to participate according to particular characteristics of interest as part of the overall purposive approach in order to support conceptual development (Charmaz, 2006, Robson and McCartan, 2016b) (see Chapter 3). A proportion of these students had already expressed their interest by attending a recruitment information meeting but were invited into the study only when interviewing them was considered beneficial to progress theory.

Consent process

A minimum of 72 hours cooling off period was ensured between the students receiving information about the study and the interview with pre-interview questionnaire being scheduled. Students taking part in face-to-face interactions completed a written and verbal consent process immediately prior to participation. Students taking part in interviews via telephone or online took part in a remote verbal consent process, and then returned written consent forms by email immediately prior to participation. An opportunity to ask questions was provided at the information meetings, via email and immediately prior to participation. This process is outlined in Figure 5.

4.2.5 Data analysis strategy

Analysis of the mDRM combined content and thematic elements. Quantitative data in the form of timings and durations of experiences were analysed descriptively with the support of Microsoft Excel. Qualitative accounts of the opportunities students engaged with were analysed with the support of NVivo (version 13.1.2) to categorise and contextualise typical activities. Elements in the questionnaire which related to the broader aim of the overall study were inductively coded and examined as part of cross-cohort analysis.

Analysis of the interview transcripts followed the inductive process outlined in Chapter 3. Line by line coding initially developed approximately 1000 open codes. Subsequently, focused coding, axial coding and theoretical coding was undertaken to develop 11 themes and 38 sub-themes. Two of the 18 transcripts were independently blind coded by the first PhD supervisor to facilitate a reflexive conversation about the analysis process and support rigour (see Chapter 3 for more details) with an on-going discussion on findings involving all supervisors as analysis progressed. A spreadsheet on Microsoft Excel was utilised to manage the volume of codes and to provide an account of how the themes were developed. Written memos also supported the development of themes. This is referred to in more detail in Chapter 5 and Appendix J.

4.3 Results – The sample

4.3.1 Sample development, characteristics, and purposive sampling

Eighteen Year 5 medical students participated in Phase B forming Sample A. Ten participants were from the first tutor group invited (10 of 15 students), 3 participants were from the second tutor group invited (3 of 15) and 5 participants were individually invited (5 of 6). Table 1 outlines the rationale behind targeted recruitment of the additional participants.

Phase	Characteristics prompting invite	Concept being explored	Students invited	Students participated
<i>Participants invited from additional attendees at recruitment event</i>				
B	Students with formal training in medical education research	Are these students better able to explicitly describe phenomena?	2	2
B	Student leading other participants to engage with opportunities on placement	Peer-to-peer relations on ward placements and role of student leaders.	1	1
B	Student currently placed in 'assistantship' block	Role of longer 'assistantship' experience influencing student engagement.	1	1
B	High-achieving student from diverse ethnic background	The motivation and practices of high-achievers. Ensure adequate representation from minority groups.	1	1
<i>Participants directly invited by email invite due to their characteristics</i>				
B	High-achieving student	The different motivation and practices of high-achievers.	1	0
Total number of participants taking part following targeted recruitment				5

Table 1: Targeted recruitment processes and rationale

Following written consent, all participants engaged in each element of the data collection process. Additionally, all participants opted to provide demographic data (see Chapter 3) which is summarised below in Table 2:

Measure	Category and Participant number			
Age	18-24	25-29	30-34	35-39
	13	3	1	1
Gender	Male	Female	Other	
	11	7	0	
Graduate status	Undergraduate		Graduate	
	17		1	
International student	International/EU Student		Non-International/EU Student	
	2		16	
Widening access status	Widening Access Student		Non-Widening Access Student	
	2		16	
Ethnicity	White	Mixed/Multiple	Asian	Black
	14	1	3	0

Table 2: Demographics of participants in Phase B

All 18 participants completed the mDRM immediately prior to engaging in the semi-structured interview. Fourteen returned paper copies and 4 returned an online version of the questionnaire (Word Document) by email. All eighteen participants took part in semi-structured interviews. Fourteen were conducted face-to-face, 3 by videoconference and 1 by telephone (see Appendix A for COVID-19 related amendments). The average duration of the recorded interview component was 47 minutes and five seconds with a range of 36 minutes 22 seconds to 61 minutes 33 seconds.

A range of specialities and wards were sampled across the 3 hospital sites (see Figures 6 and 7). Four students were taking part in placements during the early phases of the COVID-19 pandemic. At this time placements were continuing as planned, but there was uncertainty over early graduation and cancellation of final summative examinations (see Chapter 1).

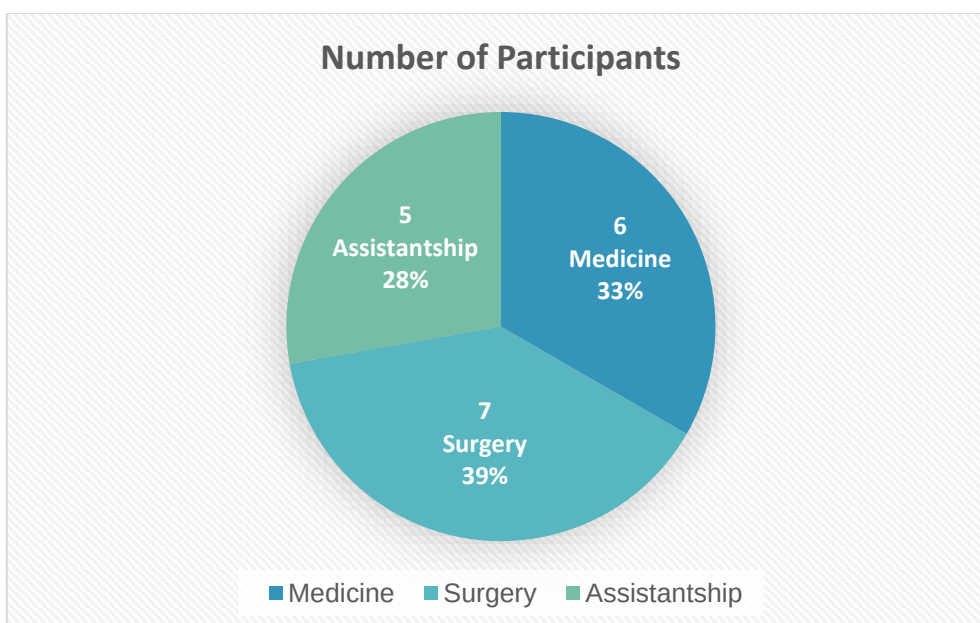


Figure 6: Number of students according to placement type

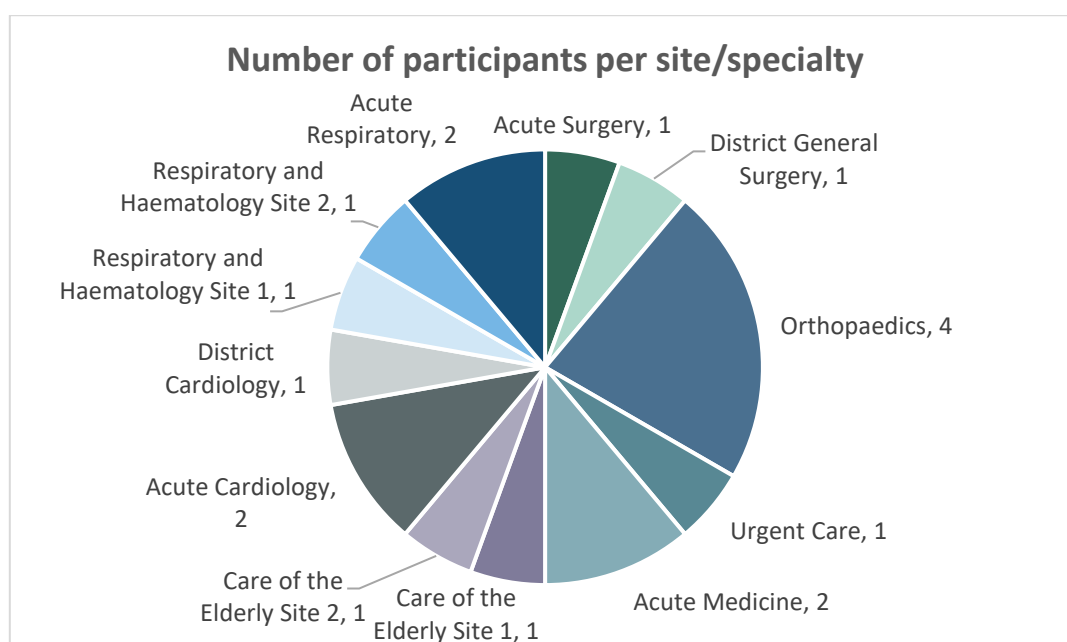


Figure 7: Number of students per site/specialty

4.4 Results – the findings

4.4.1 Scene setting - conceptualising the typical student day in time

Analysis of the mDRM questionnaires provided insight as to the structure of the typical student day experienced in the study setting. The characteristics of the day are provided below for contextual information.

Duration of the day

The students were timetabled to complete 8 hours a day (either 8am-4pm or 9am-5pm depending on the placement). On average, the students were present in the clinical placement environment for 7 hours 6 minutes per day, with the shortest recorded day of 5 hours 45 minutes and the longest recorded day of 9 hours 45 minutes. This is represented in Figure 8 below.

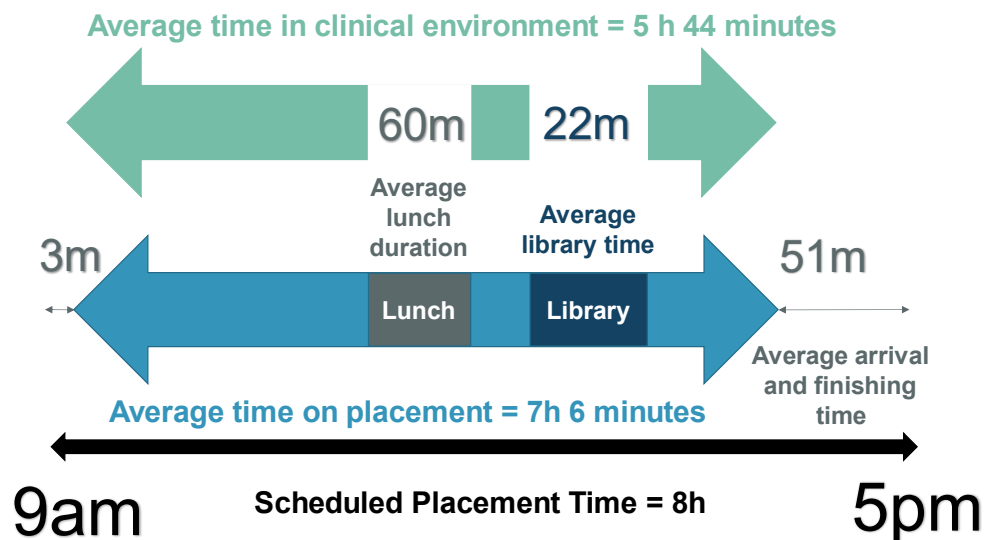


Figure 8: Schematic representing the characteristics of students' time on placement. h = hours, m = minutes. The average time in the clinical environment excludes time spent on lunch break or completing private study in non-clinical areas such as the library.

Apart from one exception where a student arrived to placement 2 hours late, the shorter days were due to students leaving clinical placements early. Sixteen of the 18 participants left clinical placement before the timetabled finishing time. On average the students left the environment 51 minutes earlier than the scheduled end time. The most extreme example of this was a student on surgical placement who left the ward 2 hours and 15 minutes early.

Time away from the ward

The students had no designated lunch break timetabled although refreshment breaks were expected and encouraged. The average duration of lunch was 60 minutes. Except for comfort and meal breaks, students were expected to be engaging in clinical activities in clinical environments for the duration of their

placement. However, 5 of the 18 students spent time in the hospital library conducting private study. Four of these students were undertaking placements in medicine, and one in surgery. Interestingly none of the students completing their assistantship block spent time in the library. Time spent in the library ranged between 30 minutes and 2 hours with an average of 78 minutes.

Time spent in clinical environments

Discounting time spent on lunch break or in the library, the average number of hours spent in the clinical environment was 5 hours and 44 minutes (see Figure 8). The longest duration was 9 hours 45 minutes, and the shortest duration was 3 hours 15 minutes. The former was experienced by a student who stayed late in theatre on a surgical placement with the hopes of being allowed to undertake an exciting procedure. The latter was experienced by a student on medical placement who spent 60 minutes in the library, had a 1 hour 45-minute lunch break and left the placement 2 hours earlier than scheduled.

Sub-group comparison

Due to the small group numbers, it is difficult to make meaningful sub-group analysis. Between the different placement types experienced, there appears to be marginal differences in the characteristics of the typical day according to the parameters analysed (Table 3 – Please note figures are subject to rounding). Surgical students stayed on average approximately half an hour longer than other specialties. Assistantship and Medicine blocks had a similar average total day but those on medicine placement had a shorter average duration on ward which is likely skewed by the time spent undertaking private study in the library.

Student Group	Average time on placement (minutes)	Lunch Duration (minutes)	Average time away (minutes)	Average time in clinical environment (minutes)
Medicine	413	61	111	303
Surgery	444	51	64	380
Assistantship	416	72	72	344
Average	424	61	82	342

Table 3: Characteristics of student days in minutes according to the stated parameters for students according to the placement type they were undertaking.

4.4.2 Scene setting - conceptualising the typical student day according to activities

Analysis of the mDRM data yielded insight into the typical day for medical students, by detailing the range of activities engaged with over the studied time frame. The narratives provided by the participants as part of the semi-structured interviews facilitated further ‘crystallisation’ of what the participants experienced (Cheek et al., 2018, Ellingson, 2009, Richardson, 2000). This is both in terms of the patterns of entering and leaving the clinical environment as well as the breadth and nature of activities participated in.

Narratives of a typical student day

The participants conceptualised what was a ‘typical’ and what was an ‘atypical’ day of activity for them. A typical pattern of experience for students was going on the ward round in the morning and feeling there were less opportunities in the afternoon. This was associated with periods of waiting, engaging in ward tasks, undertaking practical procedural skills or engagement in parallel activities such as going to the library or doing exam practice.

Patrick: The ward round at the beginning of the day. Erm. The loitering after lunch. And the loitering at the end of the day. Interspersed with a little bit of self-directed learning in the afternoon.

Jason: I’m happy to go to the library in the afternoon.

The most significant concept in the afternoons were 'jobs,' which were discrete tasks the staff required to complete as part of delivering patient care. The students were conscious about the number, quality, and distribution of jobs. Indeed, the presence of jobs drew engagement, and their perceived absence was considered negatively and could lead to disengagement.

Lincoln: So the morning'll be like the ward round, the afternoon'll be like the jobs.

*Harriet: So I would like **stay** and try and get as much as like is available to do until the point where someone's like, 'you should go because there's no jobs.'*

The participants also described typical rhythms in terms of arriving and leaving the clinical environment. As discussed, the students had start times for placements specified on their timetable. However, the participants recognised that these could be at odds with workplace rhythms, and this could result in them missing key learning opportunities.

*Nile: I think I was timetabled to be there at like 1 o'clock in the afternoon... And I'd **missed** like, this afternoon round that had happened.*

*Lee: I don't know what time they **start** but I've been there before 9 every day and I seem to have been late for the start of the ward round. But I just thought it was 9.*

Furthermore, as described in the day reconstruction questionnaire, the participants frequently left the clinical environment early. Typically, the participants describe being told to leave by other staff members, usually junior doctors. However, there are examples of the students leaving early without being instructed and of students leaving without receiving permission. Some students were motivated to remain in the clinical environment after being told to leave, or after their finish time in order to seek further learning opportunities.

Magnus: At like 11 they said er that I could go home if I wanted, so I, so I did.

Esme: By and large everyone will be like, 'mmm, no! You can just go home'. And so we go home!

Lee: So I just **stayed**. And there's plenty of times where it gets past five and the person is like, 'oh, you can go now, like, medical students here past five, oh go home!'. But you're just like 'oh you know what, I'll stay'.

Because I like the continuity of seeing something out as well.

Jason: I will **ignore** when, when like a doctor will be like, 'oh, you can go if you want

Tim: If the surgeon's very focused, then I just walk out. Sometimes if I can catch their attention then I'll just say, 'I'll go now. Thanks. Bye.'

Leaving early could also be linked to making negative predictions about upcoming experiences which is described in more detail in relation to patterns of behaviour in Chapter 6 section 6.4.2.

The nature of activities

A summary of activities undertaken by students is included in Figure 9. This is provided as an illustration of the range and diversity of student activity, to provide context for how learning opportunities are ultimately conceptualised (see section 9.3.2). A comprehensive list of activities undertaken by students is included in Appendix I which also provides general/lay definitions for local/medical terminology.



Figure 9: Schematic illustration of activities undertaken by students on clinical placement.

Conceptualising engaging with activities

An important dimension of the architecture of the typical student day is how engagement with activity is conceptualised both in terms of process and outcome. Taking a social constructionist perspective, the language used by participants provides insight into the nature of the students' personal reality (Gergen, 2015). Through the process of in-vivo coding (Charmaz, 2006), four main general categories of participation were developed based on the participants' conceptualisations (see Figure 10). These have been organised according to increasing complexity, also taking account of the degree of social integration. This is consistent with the learning theory of 'legitimate peripheral participation' where apprentices become masters of a practice through increasing social involvement (see Chapter 2) (Lave and Wenger, 1991).



Figure 10: Conceptualisations of engagement with activity.

'Doing' and the counter experience of there being 'nothing to do' constitute the most basic conceptualisations of engagement with activity. At this foundational level there is an emphasis simply on 'action'. It was negatively perceived if there was not a specific task to engage with or evidence of problem-orientated activity.

*Harriet I probably leave at lunchtime anyway. Because there's nothing to do... I personally think it's only useful if you're actually **doing** things.*

Jessica: The times where there's nothing going on, and you're just being sat on your own trying to figure out if there's something you want to be doing,

'Involvement' with activity constitutes a conceptualisation of engagement suggestive of further integration with workplace activity for example through fulfilling minor duties or undertaking basic tasks.

Roxy: I think on ward rounds it's, it's great if we can get erm involved and, again even just like writing in the notes.

Nick: recognising the best way of getting involved without kind of being, kind of in, in the way. But, I think there's lots you can do. Like, on my night shift, erm, we've had patients who've had upper GI bleeds and seizures... So I went and like grabbed some supplies... And if I hadn't have just like went and got the needle, quite a basic thing, they wouldn't, I wouldn't have been given the opportunity to get involved with the acute scenario?

Finally, the highest levels of integration into workplace activity appears to be conceptualised by students as 'contributing' to the workload and supporting the action of workers through 'helping out.'

Tim: I feel a lot more involved in the team, and contributing to the care of patients.

Nile: it's nice to almost say like, 'oh I can go and do that while you're doing something else'. 'Cause it feels like I'm helping out.

In addition to conceptualisations of the processes of engaging with activity, participants also used specific terminology regarding the outcome of engagement in opportunities. Notably the concept of time and of this being 'wasted' was particularly prominent in student reflections and was negatively perceived.

Esme: It's this feeling, over-riding feeling that, like, 'oh I, that was a waste of my time. I should have been at home revising!'

*Harriet: A lot of it's just like **waiting around**. There's a lot of wasted time.*

4.5 Conclusion

Integrating the mDRM and interview responses provides a foundational understanding of the architecture of a typical day on placement in the study location, constructed from the students' perspective. The mDRM provides insight into how

activity is experienced in time and place. The breadth and nature of specific activities is further characterised by the interview responses which also illuminate how engagement with activity is conceptualised by participants. Overall, the combined analysis and crystallisation of the mDRM and interview data provides both contextual insight and a vantage point from which to appreciate the study phenomenon with respect to patterns of behaviour relating to activities and the decision-making processes underpinning engagement. These will be explored in the subsequent chapters. Conceptualising the typical day is advantageous in understanding the value judgements attributed to different experiences and opportunities.

5. Chapter 5 - Phase B Part 2 Interviews: Exploring student experiences with a focus on the processes underlying engagement with opportunity

5.1 Introduction

This chapter presents the findings from Phase B of the study involving eighteen final year medical students who took part in semi-structured interviews preceded by a pre-interview questionnaire. Where Chapter 4 focused on the latter, this chapter focuses on presenting the interview findings based on research objective two:

- Objective Two: To explore medical students' experiences during clinical placements with a focus on student engagement with different learning opportunities and factors influencing their explicit and implicit decision-making processes.

The remainder of the interview findings which address student patterns of behaviour are dealt with in the next Chapter 6. The sample, recruitment and data collection and analysis processes for this phase of the study were presented in Chapter 4. These findings are cross-referenced in Chapter 9 in the over-arching conceptual model.

5.2 Overview

5.2.1 A note on thematic development

As previously described in Chapter 3, the phenomenon at the heart of this investigation had a broad scope spanning multiple areas of interest. Coding was therefore labour-intensive, and there was a very high volume of initial codes generated (over 1000). A robust constant-comparative process was followed to generate the resultant 11 themes and 38 sub-themes for this phase. This process was mapped through a spreadsheet document which captured the justification at each stage of the refining process in order to rationalise coding and facilitate development of the final themes. An extract of this is included in the Appendix J in relation to development of the overarching theme 'student – qualities traits and values':

Throughout the process of analysis, memo-writing was used to keep an account of changes and to inform subsequent thematic development. An extract from an analytical memo is included in the Figure 11 below. This demonstrates the process through which each code was interrogated and the thinking process behind the development of focused, axial and ultimately theoretical codes.

23.8.22 Phase B Analysis STUDENT FEATURES

Personal values seem to relate to intrinsic belief system. I'm not convinced that is a 'trait' necessarily? How do these relate to beliefs and judgements? Is it more about long term enduring values that they hold?

There are maybe traits that they say they have, and then others which are externally identified by me?

I imagine there is some cross over with behaviour and habits

My thinking is that the unsorted nodes here could be combined into a number of categories potentially

Overarching: TRAIT – quality or characteristic.

TRAIT

- Context or situation associated traits
 - o Learning
 - o Activity
 - o People
 - Not patient-centred
- General traits
 - o Personal values. Aspects pointing to value system/ enduring characteristics?
 - o Personality features?

Maybe I don't want to go into personality.

Looking at 'Gender Influence' maybe I need a whole separate section relating to Demographics

Student Features\Gender influence		Discussion or points pertinent to experiences according to gender

Student Features\Medical Education Understanding		Student saying something which I think is related to their training in medical education

Demographics

- Gender influence
- Training (prior training)

I think for things like 'arrogance' that could be 'General exhibited qualities' especially if they are ones I am identifying as the researcher.

Inconsistency is a hard one. I'm not quite sure what I am getting at with that. Yes the student is being inconsistent but that suggests that their values are in conflict? Or what?

Figure 11: Extract from analytic memo

The themes and sub-themes arose through this process of refinement and rigorous inductive analysis. The high number of themes and sub-themes developed reflects the complexity of the phenomenon which spans a broad range of potential influences. To aid the reader in navigating the written account of these themes, a map and overview diagram is provided in Figure 12 below. Discussion will take place concurrently with the presentation of the study findings.

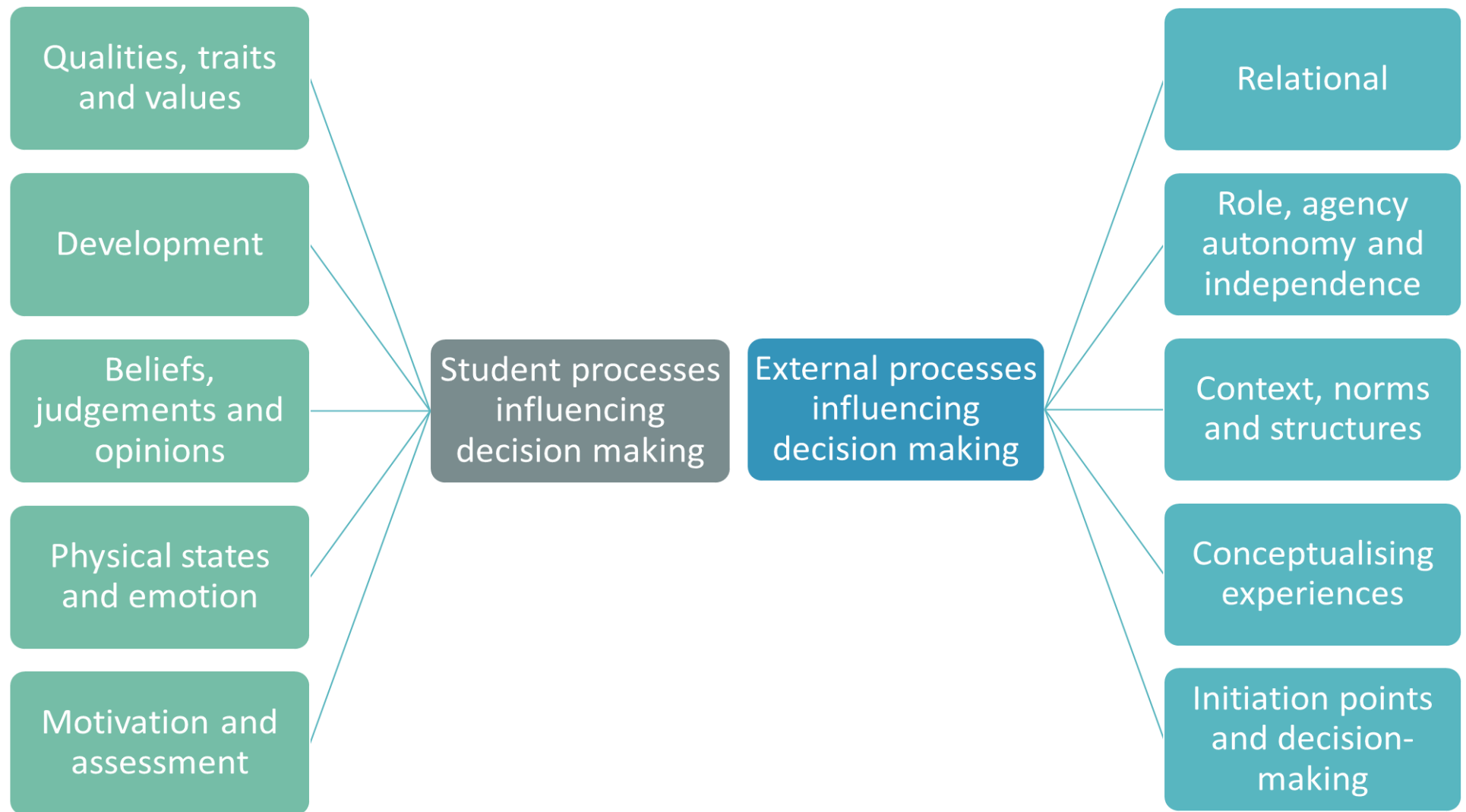


Figure 12: Map of themes addressed in Part 2

5.2.2 Overview of how themes will be addressed and quote management

Firstly, elements pertaining to the student will be described including emotional and physical states, traits and values, beliefs, judgements and opinions, motivational influences, and student development over time. Secondly, the students' interactions with others will be explored including the relational dynamic with staff, patients, and peers. The social, culture and physical arrangements for learning in clinical environments are then addressed through discussion of relevant contextual features and 'norms.' This begins with an examination of the student role, agency, autonomy, and independence as particularly pertinent features. Finally, elements particularly pertinent to the study phenomenon are described including how students conceptualise learning experiences, the nature of decision-making and the 'initiation points' for engaging with experiences. How these elements relate to each other are represented in an over-arching diagram below (see Figure 13).

In the interests of brevity and promoting readability of this chapter, additional quotes to support the development of the themes and sub-themes are provided in Appendix K.

Figure 13 Legend: Within the large grey rectangle, the inter-related processes underlying medical student engagement with learning opportunities are described. External to this box is 'context', where these features are explored in the subsequent chapter and 'patterns of behaviour' where these are referred to in the previous chapter. Within the dark blue rectangle are processes directly related to the student as an individual. Elements outside of this relate to features in the clinical environment. Closely tied to the student as an individual is their role in clinical contexts, of which agency, autonomy and independence are key concepts. The norms around how students navigate learning opportunities (demonstrated by the green triangle) are largely dependent on their interaction with staff and peers and are also a consequence of their role. The connection with the patient is indirect, symbolising the students' relative distance from patients and the need for external mediation. Arising from social interactions and the students themselves come 'initiation points', the starting point of student involvement with clinical activity, which the patient lies at the heart of. In some cases there is a formal explicit process around deciding to engage with an activity, represented by the green triangle, which is a concept explored in this chapter. Student engagement with clinical activity ultimately results in an experience. Routine experiences give rise to the concept and experience of a 'typical day' which is further explored in the previous chapter.

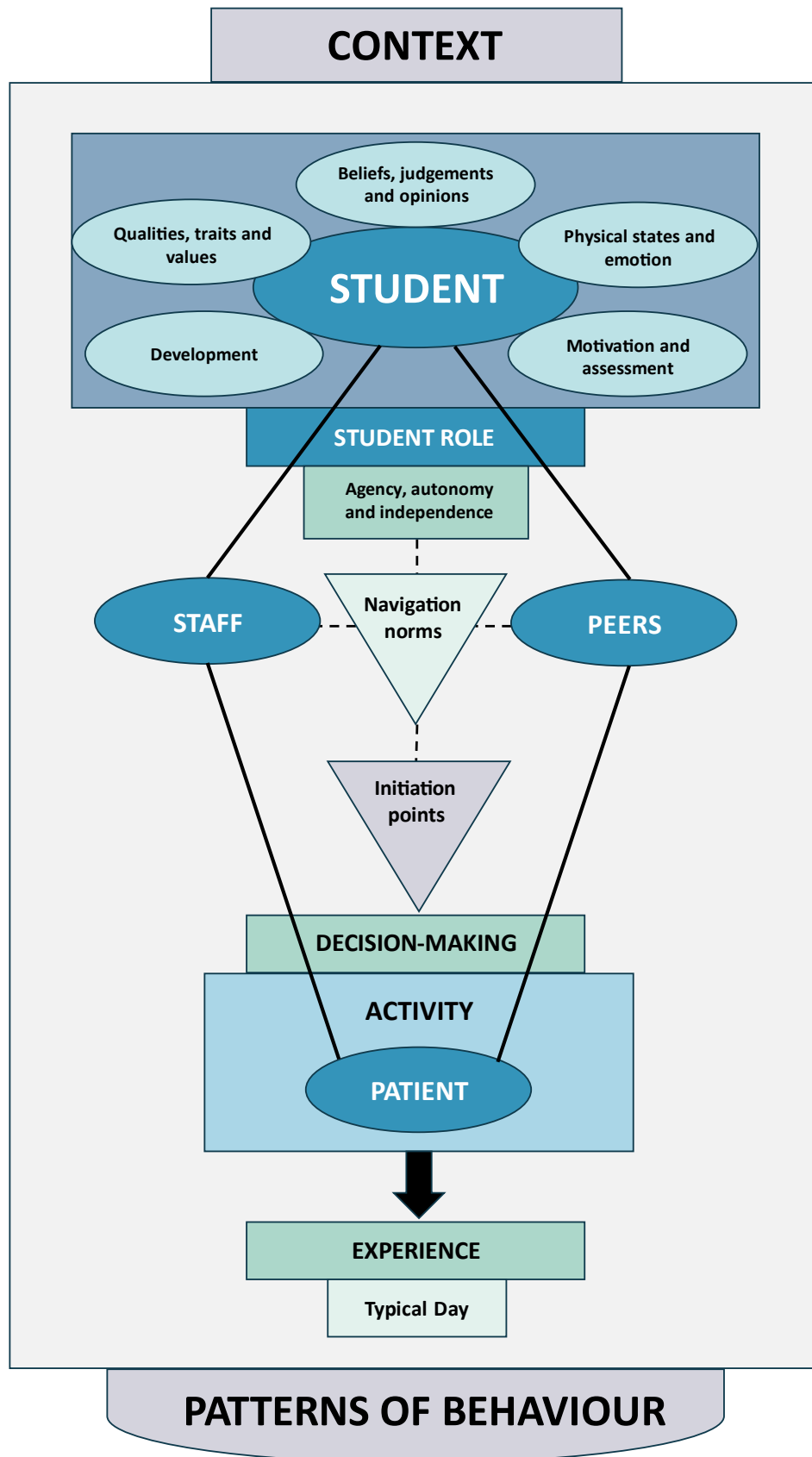


Figure 13: Map of inter-related processes impacting students' decision-making on engaging with learning opportunities on placement

5.3 Student – Qualities, traits and values

5.3.1 Introduction

This section addresses how students' traits, values and self-beliefs impact upon their decision-making in relation to engaging with learning opportunities. An important aspect is how students position themselves in relation to the study phenomenon through explicitly expressed self-beliefs. These are considered in conjunction with the students' personal qualities, traits and values as constructed through their narratives which are seen to impact upon decision-making. An overview of these traits and how they relate is included in Figure 14 below.

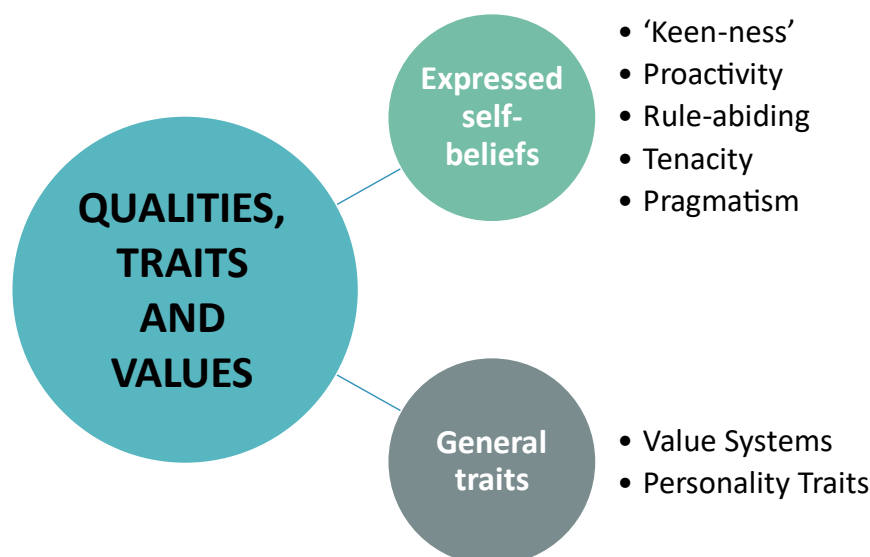


Figure 14: Outline of qualities, traits, and values influencing decision-making

Figure 14 Legend: Students' relevant qualities, traits and values include both their stated beliefs about themselves 'expressed self-beliefs' and the traits that they exhibit. Features of each of these are represented in bullet points (see text for further description).

5.3.2 Expressed self-beliefs and decision making

The students were reflective about their own traits, qualities, and beliefs about themselves, which they directly related to their approach to learning. Firstly, an important concept was that of being a 'keen' student, exhibiting enthusiasm for

learning or workplace activity. For some the trait of ‘keen-ness’ was viewed as a spectrum, whereas others directly self-identified with this feature, or attributed it to others. Being ‘keen’ was characterised by a willingness to engage or seek out learning opportunities or an enthusiasm for being present in clinical environments. In contrast, an absence of this quality was related to the decision to disengage with the learning environment:

*Lincoln: But I feel like I’m quite **keen**. So, I’d **make** myself. I try and find the opportunity to get the chance to write in the notes and review the patients.*

*Jason: Other people seem to get **more** out of their, their clinical time? Than I, than I do?... ‘Cause then whenever I’m on the ward, I’m kind of like, ‘I kind of want to leave.*

The characterisation of motivated students who are enthusiastic to learn, or lacking this trait is echoed in studies of student behaviour in clinical environments (Boor et al., 2008, Song and Vance, 2021, Berkhout et al., 2017b). In particular, the trait of being ‘keen’ resonates with the ‘engaged’ pattern of self-regulated behaviour in clinical placements as identified by Berkhout’s typology, where this type of behaviour characterised by students being motivated, independent and with an enthusiasm and enjoyment of learning. However, notably this work is limited by a low student response rate, a linguistically challenged questionnaire and potential superficial analysis as identified by the authors (Berkhout et al., 2017b).

Other self-professed traits or personality features associated with engagement with tasks were those of proactivity, tenacity, and a tendency towards rule-abiding. Self-identified traits associated with disengagement with learning opportunities were perceived ‘pragmatism’. These are summarised in Table 4 below.

Self-identified traits associated with engagement		Self-identified traits associated with disengagement	
<i>Trait</i>	<i>Example Quote</i>	<i>Trait</i>	<i>Example Quote</i>
Proactivity	Nick: I feel like I'm quite a proactive person, and then like, even really basic things I will find learning opportunities from .	Pragmatism	Tony: I'm quite like practical . Erm. Pragmatic. I'm just like, if I'm going to get a benefit out of staying then I'll stay, and if I'm not, then I'll go home either to work, or to nap.
Rule-abiding	Jessica: And we're all, we're all slightly goody-two-shoes, so like, we all do as we're told! We're told, 'you are on placement here'. So we all show up!		
Tenacity	Patrick: I'd, that's, that's just my personality. I like, if I can't do something, erm, I will fixate on it, until I can.		

Table 4: Table summarising self-identified traits relating to engagement and disengagement

5.3.3 General traits and values

Within the participant population a broad spectrum of traits was exhibited, many with direct relevance to engagement with opportunities. The figure below outlines a spectrum of traits according to relevant dimensions with examples relating to decision-making (see Table 5).

Negative features	Dimension	Positive features	Example relevant to decision making and engagement
<i>Siloed thinking</i>	Adaptability	<i>Open minded Shifting mindset</i>	<i>Giving something a chance</i> Magnus: No-one's ever like, really, like, asked me to do things that I was like, absolutely, this is absolutely useless... I would probably give it about an hour and then say, 'I don't think... that this is useful for me.' I'd give it time, even if it wasn't useful for me.
<i>Work shy</i>	Approach to work	<i>Conscientious Hard working</i>	<i>Tentativeness</i> Nick: So I feel like, yeah, I'm very careful to work kind of within the limits of my competency. I'm, yeah [laughs] as soon as I feel uncomfortable I immediately , I immediately tell them like, 'I'm not going to do this stuff!'

<i>Self-doubt</i> <i>Hide weaknesses</i>	Attitude towards ability	<i>Self-assurance</i> <i>Arrogance</i> <i>Pride</i>	<i>Receptiveness to feedback processes</i> Maisie: I was like [humourously-] 'lady! You're, you're lucky I remember this much!'. And she really picked up on these like two tiny things that I missed... You know, really, in reality, if I'd missed those two things would it change anything?
<i>Making assumptions</i> <i>Generalising</i>	Situational assessment	<i>Pragmatism</i>	<i>Missing opportunities</i> Lee: No sort of invitation was ever extended. So I just sort of said 'ok, well I'm not going to'. If they wanted me there, I would have been asked to be there.
<i>Vulnerability</i>	Emotional resourcefulness	<i>Resilience</i>	<i>Reluctance to ask questions</i> Lee: if it's something that others perceive to be below your level, I know I really don't want to ask because it's something that's quite personal, and it's like 'well, I don't know this' and you feel bad about it. So you don't want to share something that you feel bad about not knowing.

<i>Stickler</i>	Rule-following	<i>Rebel</i>	<i>Presenteeism – staying</i> Patrick: For personal reasons I'm more of a 'to the letter' kind of guy and if I'm told to be in morning and afternoon I'll try and be in morning and afternoon.
<i>Timid</i>	Proactivity	<i>Proactive</i>	<i>Anticipation and involvement with opportunities</i> Tim: And so I feel like erm I'm a lot more proactive. When they're doing rounds for example, I know what the flow of the round's going to be like and what they're going to need.

Table 5: Table summarising student traits relevant to decision-making

The role of medical student and clinician personality traits in medical training and practice have been well referenced in the literature (Doherty and Nugent, 2011, Abbiati and Cerutti, 2023), for example in impacting behaviour around asking for help (Kennedy et al., 2020), team-working (Grailey et al., 2023) or approaching patients (Barrett et al., 2017). With respect to emotional resourcefulness, the need to psychologically adapt to challenging situations is recognised by some research as a trait influenced by personality (Eley et al., 2016, Grailey et al., 2023). This is also recognised by students, who in Lovell's study described a sense of pride related to if they self-identified as being resilient (Lovell, 2016). Other personality traits valued by students included extroversion, confidence and a strong work ethic which relates to the importance of proactivity and conscientiousness identified in this investigation (Lovell, 2016, Barrett et al., 2017).

Furthermore, in addition to these traits, this study provided insight into participants' individual value systems. Personal values are recognised as important in driving individual behaviours as well as determining how meaning is attributed to experience

(Meek, 1965). Talib et al's work suggests that students commonly evaluate their experience on clinical placement according to their personal value systems (Talib et al., 2024). The most pertinent values held by students were the following:

- Egalitarianism: Expressions in opposition of the hierarchy led to an attitude of trying to communicate with all professional groupings and challenging seniority (see Chapter 7 for more discussion of hierarchy):
 - *Maisie: I'm not as scared of consultants anymore. Because I will just ask them. If I've got a dumb question I'll just be like, 'I have this dumb question'. And, you know, I try and, I don't think I have the hierarchy as much?*
- Financial propriety: Recognition of the cost of training promoted engagement with activity particularly in the context of making the most of fees paid:
 - *Tim: I worked out how many pounds a day I'm spending to be here. It's somewhere in the region of 200 pounds a day... That really motivates you in the morning!.. I'm thinking of myself as paying to learn. And, how I get every, every bit's worth of it.*
- Personal morality or ethics: Discomfort and disengagement with activity was observed when this came into conflict with the participants' sense of what is right and wrong:
 - *Jessica: If I'm doing examinations on someone, and they're in a lot of **pain**. I know I'm like, 'I'm trying to get them to do these things that are horrifically painful for them right now. When it's almost definitely going to have to be repeated by the doctor?'. So quite often if someone is in a lot of pain, I just **don't**... I'll just say, 'no'.*
 - *Patrick: If it were up to me I would absolutely take every afternoon to go to the library. But, it just doesn't, it doesn't really sit with who I am as a person.*
- Safeguarding patients: Varying attitude towards risk taking determined whether students engaged with activities at the limits of their competence, or which potentially put patients at greater risk of harm or causes patients' pain.
 - *Tim: I should take that with me... understanding the limits and boundaries and what's safe and balancing like teaching and patient safety as well.*

- Justice: A sense of what is right or fair determined participant action in relation to their peers for example providing lifts, or sharing opportunities and their sense of obligation towards staff
 - *Charlotte: I think if I turned up to the ward for the first time and had to spend the whole morning writing discharge letters for patients that I didn't know or had never met, and it was clearly just so somebody else didn't have to, I didn't think that would be very **fair** to do.*
- Honesty: Perspectives on the need to be honest or otherwise determined participants' integrity in relation to others
 - *Jane: I just don't see the point in lying!... Probably I'd just caught in, I don't know, my own web of lies and then, they could tell me that I wouldn't be interested in that speciality!*
- Success: The importance of personal achievement with respect to exam performance encouraged assessment-driven behaviour for example prioritising private study
 - *Jason: I don't just want to pass written papers. I want to do **well** in written papers as well. Well, not just written papers, any exam. I want to do well, on exams. So, doing well means, like sometimes going a bit above and beyond?.*
- Social values: Values relating to the importance of team-work or social obligations encouraged engagement with opportunity whereas the opposite value of self-prioritisation could lead to disengagement.
 - *Charlotte: There was no way anyone was going to leave at five o'clock because there was far too much to be done. And I was like, 'if I can take half an hour, an hour of someone's time to go home in the evening'. Like, it's a very nice thing to do.*

These findings resonate with the literature, where personal values such as integrity and reliability have been identified by students as important in their evolving professional identity (Findyartini et al., 2022). Furthermore, social values, such as the priority of friends and family are a key dimension of decision-making in relation to career choice (Carroll et al., 2020), whereas a sense of altruism and duty were found to motivate medical students' decisions to volunteer during the COVID-19 pandemic (Bellomo et al., 2022). Indeed, medical student values relating to morality are well-

established determinants of decision-making when facing ethical or professional dilemmas (Monrouxe et al., 2017, McDonald et al., 2021). Additionally, Lovell's study of medical student values identifies the importance placed on academic success as well as demonstrating compassion towards patients (Lovell, 2016).

Finally, an aspect which can be considered partly a trait and partly a 'value' is a participant's sense of self-esteem. This is a complex construct which is related to personal identity and also self-efficacy which describes personal beliefs relating to one's ability to control and influence their circumstances (Zimmerman, 2000, Bandura, 1977). The relationship between self-esteem and engagement with learning opportunities was complex and individual. Predictably, higher self-esteem was associated with engagement, and low self-esteem with disengagement. However, additionally, low self-esteem was cited as a motivator for increased preparation and engagement with private study due to a fear of negative emotional experiences.

*Jessica: It does like affect your self-esteem a bit... I maybe **do** go home. And read about things. But that's because I'm scared. That it's going to come up tomorrow and like, I'm like, I **need** to know some things for tomorrow. Because I'm **scared**!*

5.3.4 Conclusion

Recognising that the participant population is heterogenous, and human traits are multifarious, several student traits were either self-identified or exhibited relating to the study phenomenon. A predominant aspect was the approach towards and interest in learning, principally referred to by the participant by the in-vivo term 'keenness' which was viewed as a spectrum directly associated with engagement. Other relevant traits included how the students perceived themselves, their personality traits, and their characteristics in relation to social interaction. Finally, the participants referred to their personal value systems which governed behavioural self-regulation and their situational perspectives.

5.4 Student – Development

5.4.1 Introduction

In this study ‘developmental processes’ include both universal processes such as ageing as well as experiences gained over time for example through progressing through the typical trajectory of a formal medical programme. The latter includes important ‘transition’ points, such as the first experience of clinical placement. These ‘transitions’ are complex and well-studied phenomena within medical education and were not a specific focus of interest for this thesis (Atherley et al., 2019, Dyrbye et al., 2005, Pitkala and Mantyranta, 2003). However, this study focuses on the intersection between transitions and individual growth where these are manifest in student decision-making with respect to learning opportunities. Figure 15 outlines the key factors which will be considered in turn.

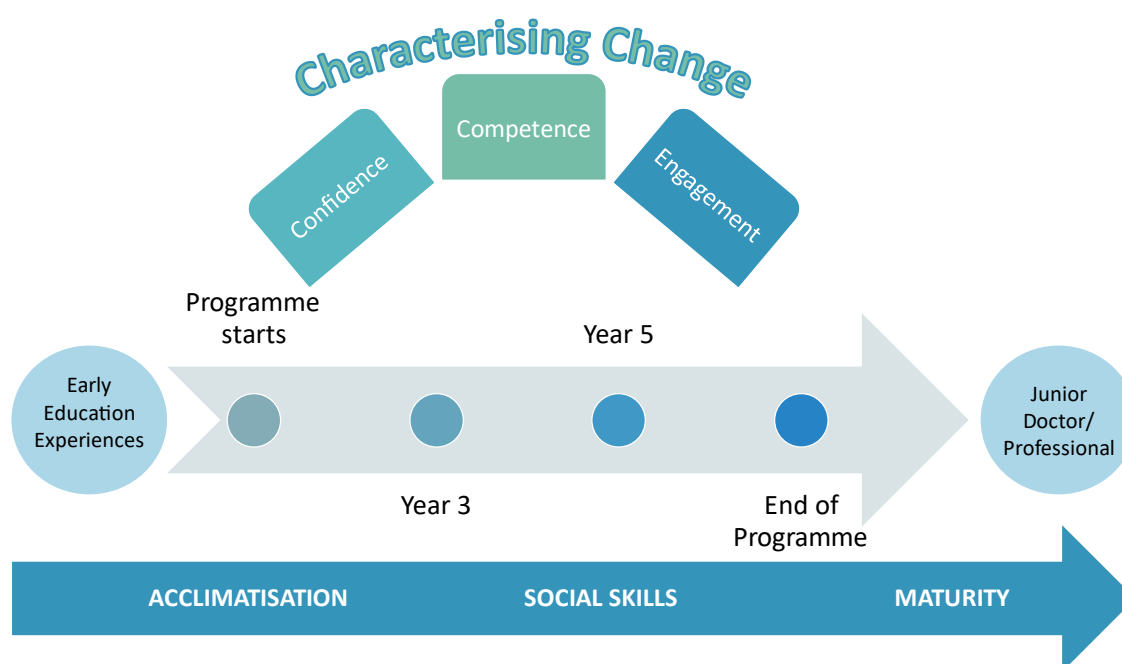


Figure 15: Developmental processes relevant to study phenomenon

Figure 15 Legend: The central arrow represents the progression of time from early educational experiences, through stages of medical school training to when the student graduates as a doctor. Above this arrow, the blocks titled ‘confidence’, ‘competence’ and ‘engagement’ represent ways in which developmental change is exhibited by students during placement. The bottom arrow represents the processes of acclimatisation, development of social skills and increases in maturity which occur over time as part of developmental progression.

5.4.2 Development according to stage of training

Considering the structure of training, progression through the years of medical school ('stages of training') conferred prominence in relation to how students conceptualised their experiences and appeared to guide behaviour. Typically, students made comparisons regarding their approach and attitude towards study in the earlier stages of the medical programme as compared to their current 'final' year. Key elements were increased confidence and proactivity, improved time management, and increasing autonomy and self-determination. This development was perceived as associated with both increased engagement with opportunities associated with proficiency, but also decreased engagement where students became more selective.

Patrick: Third year I could stand around for half an hour, waiting to be adopted by someone. But now I will very much be, like, 'if you've got something for me to do, let me do it, otherwise I'll organise my own thing and slash go home.'

Max: I definitely jump on opportunities more. If someone asks me to do something anyway, I try and do it... Whereas you know in third year I'd be like 'oh noo... hmmm...meh... hmmm don't do that. It's alright. I'll learn that later'.

This finding resonates with the literature which demonstrates differential student perceptions of the clinical environment according to the stage of training (Dunham et al., 2017) and an increasing tendency to actively learn and get involved in activity with growing seniority (Bitran, 2012).

5.4.3 Ongoing progressive developmental forces

Over time the students also recognised a gradual increase in maturity, social skills, and familiarity with the clinical environment. Considering the former, the participants used the metaphor of transitioning from 'baby' to 'adult' which they related to increased engagement with opportunities.

*Patrick: As compared to when you **were** just a baby. And when you **were** like pretty much just out of school, or just when you **couldn't** have been useful in any way. Compared with now where I'm, you know, I spent the*

morning I saw erm a, I saw a lady, did a history and an examination of her problems and I created a plan.

Roxy: It's mainly kind of being a bit more 'adult' in fifth year probably.

Increased social skills included overcoming the fear of talking to patients, or adapting how they relate to staff to reap social rewards.

Roxy: when you first go on, it is still quite sort of, 'God, I feel so out of place and scared and I don't know what to say to anyone, or who anyone is or whatever'.

Magnus: I think I probably make more of an effort with the doctors now, 'cause I feel like that, if you're like friendly with them and like, if they kind of like you, you kind of get more to do.'

Finally, a sense of becoming 'acclimatised' to clinical environments was associated with increased engagement with opportunities.

Lincoln: [Previously] you like turn up to the ward and you feel, you feel really out of place...Whereas [now] you sort of just go and like, it seems more natural?

Considering these findings with respect to the literature, research suggests that students adapt to clinical environments after the initial shock of exposure (Dunham et al., 2017). The development of social skills can be related to the recognised process of socialization across the medical curriculum as a component of professional identity formation (Cruess et al., 2014). Finally, the student appreciation of the gradual gains in maturity is something recognised in Lovell's work on student values (Lovell, 2016).

5.4.4 Conclusion

Developmental processes were impactful in influencing student engagement with learning opportunities. The participants reflected on their transition through the medical programme and self-identified with the increasing autonomy and involvement through each stage of training. Gradually increasing maturity over time, acclimatisation and evolving social skills were ongoing developmental processes

which influenced the participant's drive to engage with activity and the effectiveness of efforts to participate.

5.5 Student – Beliefs, judgements and opinions

5.5.1 Introduction

This section addresses students' beliefs, judgements and opinions in relation to how they interact with clinical activities within clinical environments. Figure 16 provides an overview of both general and specific belief systems which will be explored in the following section. Firstly, the foundational belief system through which students generally consider activities and environments will be described. Subsequently, beliefs relating to modes of interacting with clinical environments will be explored. Finally, the specific judgements addressing specific activities, environments and other phenomena relevant to decision-making will be outlined.

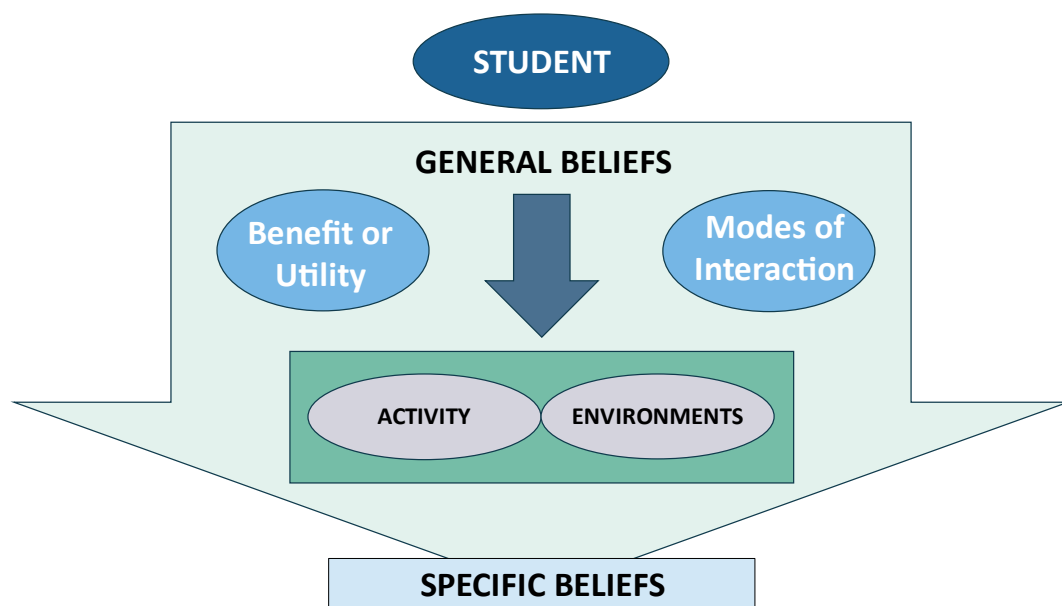


Figure 16: Overview of general and specific student beliefs

Figure 16 Legend: The green arrow represents students' general belief system in how they approach opportunities. Within this is a schematic of how general beliefs are organised around different activities and clinical environments. The blue circles represent how judgements are made about the benefit or utility of opportunities, including in relation to the means of interacting with them. These general beliefs are then applied to specific situations represented by the blue box.

5.5.2 General value judgements

As summarised in Figure 17 below, the students predominantly made evaluations of their experiences according to how they related to two spectrums of interest (helpful/pointless and interesting/boring) and the subject of 'assessment' as an area of specialist attention.

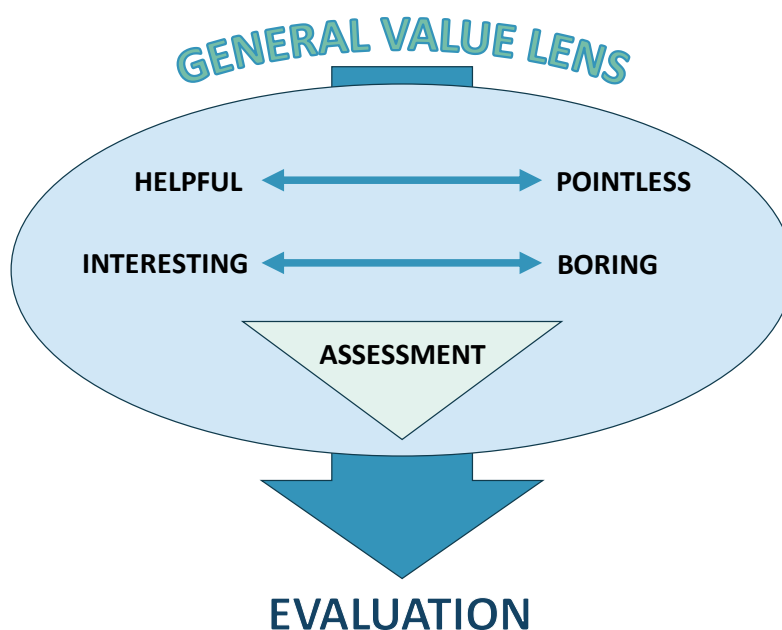


Figure 17: General value assessment of activities.

Figure 17 Legend: The general system for judging the value of opportunities is represented according to two spectrums (helpful to pointless and interesting to boring) and one area of focus represented in the green triangle (assessment).

The first spectrum is that of usefulness or helpfulness ranging from 'pointless' to achieving a status of 'helpful.' Students would apply this judgement either predictively to determine the value activities, or retrospectively as a means of making sense of their experiences (see Table 6).

Usefulness evaluative spectrum		
Spectrum	Retrospective Value Judgement	Predictive Value Judgement
Useless/ not helpful	<i>Magnus: Going to surgery... I always found it useless 'cause you just kind of stood there.</i>	<i>Harriet: Whereas the ward, like, you kind of, you go and you like kind of know that it's not going to be helpful but you need to be there just in case like, there's something like, that will be good?</i>
Helpful/ useful	<i>Jane: It always starts with a ward round. On most wards. I find they're helpful because you get to see lots of different patients and see how they're managed in hospital.</i>	<i>Patrick: To see if there's any like useful opportunities around on the ward... sometimes you just sort of gotta be patient and wait for them to arise.</i>

Table 6: Evaluating experiences according to usefulness

These value systems could be dichotomised, where the distinction of useful versus pointless was applied in a binary manner. On other occasions, activities and environments were viewed contextually, and value systems applied in a more nuanced way:

*Harriet: Obviously like being in a clinical environment **is** useful. But I personally think it's only useful if you're actually **doing** things.*

Magnus: Doing [exam practice] would have been a lot more useful to having someone watching me and giving me feedback.

'Usefulness' of an experience has been a key metric of interest for medical educationalists in surveying students' clerkship experiences (Golden et al., 2014, Atherley and Taylor, 2017), for example Lyon's study which evaluated how useful students perceived time in theatre to be (Lyon, 2003). This suggests a shared

paradigm of evaluating experience between educators and students, or perhaps is representative of the culture of learning in clinical environments.

The second is a spectrum of interest, ranging from ‘boring’ to ‘interesting’. Again, this evaluation could be applied predictively or retrospectively, and opinions around certain experiences could become ‘fixed’ for the student. Interest judgements also directly determined engagement with experiences.

Patrick: The board round was... erm, it just sticks out as being a really, really dull part of the day. And I think that's because it always is.

Nick: In previous handovers I just didn't pay attention whatsoever!... Because it didn't, it didn't interest me at all.

Indeed, a lack of interest in an activity has been identified in prior research as a key reason for medical student disengagement (Kassam et al., 2020, Zhao et al., 2019). The following section ‘Motivation and assessment’ addresses the extent to which interest level is a strong motivational force for the student (see Section 5.7.7).

Moreover, activities were regularly related to ‘assessment’ which was a specialist area of interest for students. This prominent phenomenon is principally explored in the next section. However, it can also be considered a composite value judgement determining interpretations of ‘usefulness and helpfulness.’

Magnus: [discussing theatre experience] I did find it interesting, like, we don't usually get to do as much as I have been able to this week. Erm. In terms of like usefulness, in terms of like exams, probably not as much.

Tim: Being in theatre isn't very useful for exams. Because I'm learning to be an F1.

Finally, there was considerable overlap between these dimensions, though some participants considered usefulness and interest level as distinct concepts.

Charlotte: Which is not that useful. Like, watching somebody else take a history from a patient. Like, it's a bit boring. It's not a great use of my time.

Patrick: Medicine's such a broad topic that we can't be intensely interested in everything that it covers. But we should at least have an understanding

of all the different things within it, so. So, yeah, absolutely I think that things can be useful but not subjectively interesting.

In conclusion, the participants engaged in general evaluation of activities according to the spectrum of usefulness/helpfulness, the spectrum of 'interest' and also how they related to assessment. These distinct but interlinked dimensions were used to evaluate past encounters as well as predict future experiences and could directly influence student engagement with experiences.

5.5.3 Beliefs – modes of interacting

The students made explicit judgements relating to the dynamics of engaging with activities. Generally, unstructured activities, repetition and being passive were not valued.

Nile: I'm not a massive fan of being in theatre... it's very observational, and you're just there and you're just kind of watching.

*Lincoln: it's a bit **repetitive**...I feel more inclined to go home and study at the moment.*

Contrastingly, the students valued productivity, efficiency, engaging practically with tasks as well as problem solving and having the opportunity to practise opportunities.

Magnus: Trying to work through, trying to build a jigsaw out of different pieces of the history... Just trying to work out what's going on. Em, it's obviously quite engaging

Lincoln: I try and be efficient.

Additionally, three elements were repeatedly emphasised as focal points that underpinned students' belief systems. These were a focus on making diagnoses, the degree of novelty in a situation and a drive to engage with patient pathology.

Tim: So, unexpected, new cases! Erm. I guess any trauma, because there, there tends to be more interesting cases because by definition trauma is not so routine.

Maisie: New and different things is always quite good, erm, and I think just, it gives you a chance to kind of, you know, flex your diagnostic muscles, kind of thing.

These elements can be seen as related phenomena on a spectrum, as summarised in Figure 18 below:

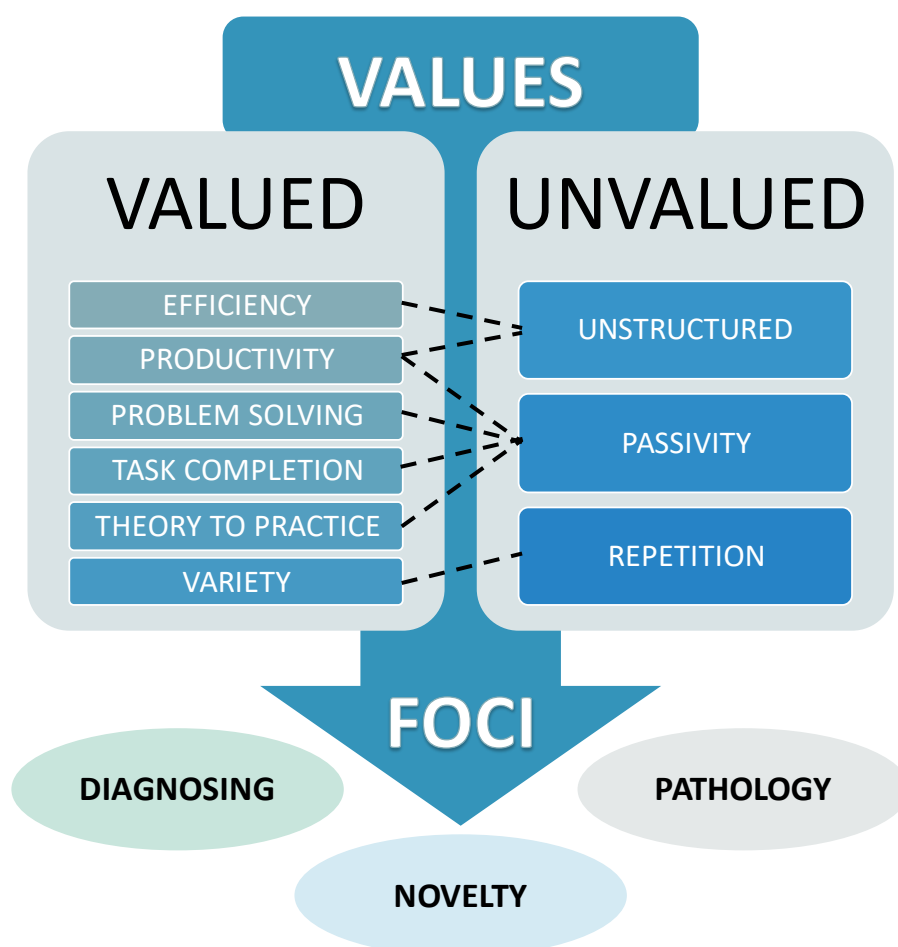


Figure 18: Beliefs relating to modes of interacting

Figure 18 Legend: The two light blue boxes represent the ‘valued’ and ‘unvalued’ modes of interacting with opportunities with the dashed lines showing how these are connected. The bottom arrow then relates these to over-arching valued features of opportunities which are particular areas of focus for the student, represented in the coloured circles: ‘diagnosing’, ‘novelty’ and ‘pathology’.

Many of these beliefs around valued modes of interacting are resonant with the existing literature, for example preferring active participation over passivity (Gottlob et al., 2019, Tanna et al., 2020, Marz et al., 2021, Dornan et al., 2007) and the drive towards efficiency in task management (Brown et al., 2023, Liu and Li, 2023).

5.5.4 Specific judgements and beliefs in relation to activities

The students described their opinions and values in relation to specific activities and the characteristics which determined or modified their values. Specific beliefs were also expressed in relation to the value of being in the clinical environment. The following section will give an outline of these beliefs, judgements and opinions and their relation to the study phenomenon.

Firstly, the students held firm and fixed beliefs in relation to tasks. Making phone calls, requesting investigations, and writing in the notes were generally considered menial and less relevant. Undertaking clinical procedures such as venesection and cannulation were generally considered high value tasks that were sought after. Engagement with 'administrative' tasks was a controversial area, with both strong positive and negative opinions expressed in relation to the relevance of this for student learning and involvement with the workplace.

*Jason: it genuinely feels like a lot of paperwork in the afternoon. Which, I'm not going to learn from and I don't want to do. And obviously not being **paid** to be there. So, why should I be staying there watching people do discharge letters?*

*Tony: I'd easily go in and be like, 'any cannulas that need doing today?' ...'
But I haven't done that with a phonecall. Yeah! I don't know why. I guess, they're just seen as, they're sort of, I think it's like **soft skills** isn't it.
Versus, your **hard** skills. And... a lot of the time those soft skills are kind of neglected a bit.*

This finding relates to the literature which suggests that some tasks are of limited learning value to students, work described by some educators are 'non-instructive', 'ancillary' or 'scut work'. (Hem-Stokroos et al., 2009, Cook et al., 1992, van der Hem-Stokroos et al., 2004, Dolmans et al., 2001, Bugaj et al., 2017). Tasks included in this category included looking for radiographs or results which the students in this study disfavoured, but also taking bloods which was a task valued by our student body (Hem-Stokroos et al., 2009, Cook et al., 1992, van der Hem-Stokroos et al., 2004, Dolmans et al., 2001, Bugaj et al., 2017). Regarding writing in the notes, the literature found that some students valued this task (van der Hem-Stokroos et al.,

2003) whereas others perceived this kind of task to be uninstructional, boring or menial (Yeh et al., 2020, Remmen et al., 2000).

Furthermore, the students also expressed a variety of beliefs according to prominent events occurring throughout the clinical day. Ward rounds were considered compulsory but offering inconsistent value for learning.

*Jason: The issue with the ward round is that sometimes they can be really **good** learning experiences...And there are other times when you're just following somebody around silently whilst they look at them, they write, and they don't explain anything.*

This relates to findings in the literature where this activity was the least valued activity in some studies (Young et al., 2009, Remmen et al., 2000) but was an area of interest in another study (Zhao et al., 2019). Handover times and clinical meetings were also variably perceived with regards to their utility for learning and engaging with the workplace.

*Harriet: They make you go to handover meetings or like MDTs then there's absolutely **nothing** to gain. At all. Like, because you don't know half the patients. And you're also not going to **do** anything for those patients **personally**.*

*Nick: I **really** think there is something **massive** to be **gained** from handover. And it's such an important **skill** as a foundation doctor.*

The students favoured seeing patients and considered this activity relatively valuable for learning.

*Tony: Whereas things like, more procedural things for example and actually seeing patients seems more kind of **valid** as a learning experience.*

Indeed, some studies suggest time spent with patients was perceived by students as the key metric for success of a placement (Cook et al., 1992, Dolmans et al., 1999). However, as described in section 6.4.2, the participants were highly selective with regards to the patients they chose to engage with. Patients were considered to vary in their worthiness for learning and the students typically sought out 'good' patients'.

Lee: Oftentimes you sort of go and say, 'oh, are there any good patients to sort of examine, speak to?'

Attributes of a 'good patient' included being 'nice', coherent, willing to talk and able to recount an interesting story in a concise and accessible manner. The students also valued younger patients and those that had pathology and 'clinical signs,' particularly where these were 'textbook.' Conversely confused patients or those without any examinable findings were less valued.

Max: I'm not just going to do an abdo exam on someone with a completely normal abdomen.

*Carl: So they've got a good **story** and they're a good historians. 'Cause some patients will just not give you a good history whatsoever... And some patients are really good at telling things.*

*Maisie: I'd be reasonably selective about which patients to go and see! And, which sounds bad but normally I'm like, if they're a bit **younger**... If someone's **chatty**. But sometimes it can go the other way, and you have really chatty patients who they're like, 'oh, this persons' good.' But they're actually **not**, 'cause you can't shut them up!... confusion, if they're delirious that's obviously a bad idea. Erm. General demeanour I would say, if someone's nice!*

A focus on 'interesting,' chatty or coherent patients is also a finding borne out in other medical student studies (Zaidi et al., 2012, Barrett et al., 2017, Reid et al., 2014). This problematic bias against particular patient groups described in more detail in section 6.6.1 in relation to patient care provision.

Finally, the participants expressed opinions on whether generally spending time in clinical areas was valuable. These beliefs also coincided with their perspectives on when it is considered appropriate to leave the clinical environment, for example to go to the library.

*Harriet: Obviously like being in a clinical environment **is** useful... There's not a lot of **point**. Hanging around, if you're not going to gain anything from it?*

Jason: I'm happy to go to the library in the afternoon. But it feels like a massive admission of defeat to be at ten like, 'going to the library, this day's a write off!'.

5.5.5 Conclusion

In conclusion, the participants expressed a broad range of general and specific pre-existing beliefs, judgements and opinions which determined how they related to the study phenomenon. From a general perspective, opportunities were evaluated according to the spectrums of interest or usefulness/helpfulness as well as the specific areas of focus of the relation to assessment. More specific value judgements related to different modes of interacting with opportunities, and there was a preference for activity involving diagnosis, clinical pathology, and 'novel' experiences. Finally, the students expressed beliefs in relation to specific activities, most notably in relation to seeing patients.

5.6 Student - Physical states and emotion

5.6.1 Introduction

This section addresses how students' emotional and physical states influence decision making in relation to engagement with learning opportunities. Positive, negative and neutral emotions and affective states will be characterised and explored in relation to general and specific opportunities. Emotions will be considered according to their 'valence' (positive versus negative) and how they encourage or discourage activity ('deactivating' and 'activating') (Nakamura, 2023). Physical states such as tiredness and feeling unwell will also be examined with respect to the study phenomenon.

5.6.2 Positive emotions and affective states

The participants described a range of positive emotional experiences. These included states of contentment, such as feeling satisfied, reassured or relaxed, all of which could modify engagement with opportunities. Satisfaction derived from engagement with activity induced further engagement in a positive cycle. Staff encouragement and reassurance could counter the tendency for student disengagement following negative learning encounters. Whereas the lassitude

associated with states of relaxation could result in a failure to engage with learning opportunities.

Nile: There's a bit more satisfaction in doing it yourself...I'm happy to check in with someone and if they give me a job, I'm happy to go and do it.

Maisie: Chatting to fellow students and kind of having a bit of a relax and not thinking about medicine for a, an hour or so, is quite nice.

The role staff emotional support and praise has on promoting student engagement with tasks is well recognised in the literature (Zhao et al., 2019, van der Zwet et al., 2011, Karp et al., 2019) as are the positive affective states induced by achievement (Yeh et al., 2020). Indeed, emotional experiences are recognised not only to be part of the experience of learning, but to be instrumental in the process of learning, particularly on clinical placements (Pekrun and Linnenbrink-Garcia, 2014, Berkhout et al., 2015, Dornan et al., 2019).

Other activating positive emotions included excitement, entrancement, enjoyment and pleasure. The intrinsic motivation derived from these emotions is described in more detail in the subsequent section 'Emotion associated motivation' (see Section 5.7.5).

The participants also described gratitude and feeling generically 'good.' Being in a positive mood was explicitly associated with engagement by students, including improved confidence and choosing to stay longer in the clinical environment. However, positive affective states were not always enduring, and a change in motivation could quickly follow negative experiences.

Jessica: I was leaving the hospital feeling a lot more confident with several things than I'd entered it. And that was, you know, a really good feeling, that makes me feel, you know, well it feels like your day's been
productive.

Jason: I'd actually came in in a really good mood on Monday morning... And just by 9:15 I was just like, [pulls a face] in a state of, you know,
anger. And existential dread.

Indeed, prior studies have associated being in a positive mood with increased productivity during clinical placements (Zhao et al., 2019) and actively seeking out feedback in the clinical environment (McGinness et al., 2023).

5.6.3 Negative emotions and affective states

Negative emotional and affective states were generally associated with disengagement with learning opportunities through a variety of mechanisms which often prompted students to leave the clinical environment. Emotions relating to anger included annoyance and a sense of frustration. Annoyance was often associated with a sense of injustice. Frustration at not being able to engage with the workplace was particularly demotivating.

Harriet: And like I obviously didn't get paid! [laughs] But they did. And so like, that's kind of annoying.

*Patrick: When you are left to loiter, or ignored on the ward it's, it's now even more **frustrating** I think.... 'if you've got something for me to do, let me do it, otherwise I'll organise my own thing and slash go home.'*

Indeed, frustration was a commonly experienced negative emotion according to studies of medical students in the literature (Woolley et al., 2003, Cameron et al., 2011, Homberg et al., 2023), particularly where students felt constrained from achieving their goals (Jakobsen et al., 2019, Smith et al., 2011).

Anxiety-related states were another powerful force for disengagement. The participants describe fear, dread, intimidation, nervousness, worry, shyness, panic and a sense of being 'on edge' in connection with their clinical experiences. These emotions were associated with avoidance, withdrawal and choosing to defer experiences.

Jessica: Whereas if you're sort of sat there feeling on edge anyway, you're like, [sighs] 'I'm just going to go as soon as no-one's going to notice I'm gone'.

*Charlotte: I've been putting it off myself a bit. Erm. Earlier on in the assistantship. Just because I was just a bit **scared** about doing it.*

Indeed, previous work has emphasised the intensity of emotion experienced by students when looking after unwell patients (Johnson et al., 2019, O'Connor et al., 2017), particularly where this is associated with increased responsibility and heightened workload (Godefrooij et al., 2010). Moreover, anxiety states were almost endemic to studies of medical student emotions during clinical placements (Yeh et al., 2020, Nsubuga et al., 2022, Lyon, 2003, Cameron et al., 2011, Hagg-Martinell et al., 2017, Karp et al., 2019, O'Connor et al., 2017). Relevant circumstances included being over-trusted with responsibilities (Karp et al., 2019), the anticipation of new environments (Cameron et al., 2011, O'Connor et al., 2017), concern over knowledge gaps (Hagg-Martinell et al., 2017) and feeling ill equipped for interacting with patients and their families (Yeh et al., 2020).

Other relevant negative states related to disengagement included boredom, disempowerment, and discomfort (including feeling awkward, embarrassment, and self-consciousness). Discomfort led to students holding back from opportunities though this was sometimes an appropriate response to being asked to work outside their areas of competence.

*Harriet: They just visibly **don't want you there!** Which is just really awkward! 'Cause you've got really nowhere else to go, so you just have to be like, [said timidly] 'Yeah, okay I'll just, like stand in the corner...'*

*Nick: I'm very careful to work kind of **within** the limits of my competency. I'm, yeah as soon as I feel uncomfortable I **immediately**, I **immediately** tell them like, 'I'm not going to do this stuff!'*

The importance of student comfort for promoting engagement is recognised in the literature (Karp et al., 2019), as is the demotivating influence of boredom (Song and Vance, 2021).

In other instances, students felt negative but could not characterise this fully. Expressions included 'feeling bad' or 'not good', and 'wanting the ground to swallow you up' or something being a 'punch to the gut'. Negative emotional experiences could also have a cumulative or enduring effect which led to students concluding they were having a 'bad day'. This conceptualisation negatively coloured subsequent experiences and was powerfully demotivating.

Lee: You just kind of want to, want the ground to swallow you up... So sometimes you actually do know something, and you're hesitant to say.

Harriet: And things like, that you want to leave early for, and it's not necessarily like medicine related. So yeah, it might be just like if you're like not having a good day.

The demotivating influence of 'vulnerable' days is recognised in the literature (McGinness et al., 2023).

Stress and guilt were unique amongst negative emotions because they could trigger engagement with opportunities as well as disengagement. This fits with the model of 'extrinsic' motivation which is described in more detail in Section 5.7.

*Jason: I feel **really, really** guilty when I don't go in.*

*Carl: I wanted to study hard. I wanted that **stress** to push me on, and then that final kind of **elation** when you **succeed**, and you finish.*

However, the literature also cites numerous examples where the experience of excessive stress, and burnout is inhibitory towards student engagement (Johnson et al., 2019, Agarwal et al., 2020). In particular, 'guilt' can be the predominant emotion amongst medical students and can arise in clinical contexts for example through the perception of burdening staff members, leading to student withdrawal (Yeh et al., 2020, Greenmyer et al., 2022).

5.6.4 Neutral emotions and affective states

Some affective states could be considered neutral or both negative and positive depending on the circumstance. Acceptance was a powerful neutral emotion relating to engagement. Facing circumstances the students felt powerless to change could lead to both disengagement or conversely the decision to persist with unfavourable conditions.

Roxy: You just need a thick skin as a med student and a doctor sometimes I think when people are trying to get you to, pull you in all directions and things.

Lee: The scrub nurse actually was, sort of said 'oh are you going to scrub'. And then I said 'well I hope so!' [laughs] And then, no sort of invitation was ever extended. So, I just sort of said 'ok, well I'm not going to'.

5.6.5 Physical states

A participant's physical state and needs could also influence decision-making and engagement with learning opportunities. Physical discomfort was frequently encountered and was a powerful negative influence on engagement particularly when juxtaposed with the physical comforts proffered by the participant's home environments. Feeling tired or physically unwell could also deter students from engaging with opportunities.

*Esme: 'I **hate** medical ward rounds'... 'Because they **take all day!** And you **stand in the corner**. And you pull the curtains round. And your feet get sore'.*

Tony: Even if something does come up, I'm not going to be engaging with it as well as I would do. Because I feel a bit crap right now... If I'm feeling sleepy. And tired. Or poorly, or I've got a headache coming on or... And, that if it is an opportunity to leave earlier, I just think, 'aw just might as well take it while I still can'.

Indeed, the fatigue encountered by medical students on clinical placements is a growing concern (Farrell et al., 2019, Seoane et al., 2020), with studies suggesting that this is exacerbated during clinical placements and can be compounded by the emotional burden of the challenges in navigating clinical environments (Taylor et al., 2019, Ahmed et al., 2017, McKerrow et al., 2020, Zhao et al., 2019). Such fatigue has been associated with demotivation to engage with learning in students (Zhao et al., 2019), for example not seeking feedback from supervisors (McGinness et al., 2023). Furthermore, though examples provided the participants describe short term ailments, the impact of ill-health and disability on medical students' experiences and attainment is well established (Tso, 2018, McKerrow et al., 2020, Dyrbye et al., 2005).

5.6.6 Conclusion

The participants describe experiencing a myriad of positive and negative affective states whilst on clinical placement. These often-powerful emotions were associated with patterns of engagement as well as disengagement practices. Examples of the latter include choosing to leave the clinical environment, withdrawing or delaying experiences. Generally, positive emotions encouraged engagement and motivation, whereas negative emotions inhibited this. The exceptions were the emotions of 'guilt' and 'stress' which were 'activating' in the sense that they spurred on activity. Neutral emotions such as acceptance and confidence levels also modulated engagement. Physical states such as discomfort, tiredness, and ill health negatively impacted student engagement.

5.7 Student – Motivation and assessment

5.7.1 Introduction

A prominent factor influencing student engagement with learning opportunities in the workplace was their degree of motivation and what this was orientated towards. The following section will explore the participants' goals as focus points for students' motivational drive. Different motivational influences will then be explored starting from students' personally derived motivations and extending to social and contextual motivational influences. Finally, the motivations specific to educational phenomena will be explored, including a discussion on the role of assessment in motivating students.

*Nick: Whereas your motivation for finals, I feel like is more like, erm, **longborne** in terms of oh like, 'I'm really motivated to learn all of this stuff over this prolonged period of time.' Whereas I feel like when you're preparing to be a doctor you have to be really motivated like, **in the moment**.*

5.7.2 Goals

The students were explicit about their personal goals which served as over-arching motivators for their engagement with workplace activity. Starting at the most intrinsic level, the students describe a goal of remaining in a state of comfort. This was both

generally and in relation to specific activities where comfort both in the present time and their future role was a factor.

Max: Doing it a few times can make you so comfortable with it. So, I'd just like to have that with as many things as possible really... imagine if you didn't do it, if you had to go and do that on your first day, especially on a surgery ward when they're going 100 miles before, having never done it before it would be quite stressful. So you want to alleviate that stress before you get... before you get going.

Tony: You can always do more cannulas. And if you do more, then you'll feel more comfortable with them when you start work.

Indeed, the nature of the participants' future role as first year doctors, 'Foundation Year One doctors (FY1/F1)' was a common framework used to evaluate the value of learning opportunities or activities. This in turn informed task selection. Some students professed to the aspiration of becoming a *good* doctor or proficient in their future role, which motivated them.

*Lee: At this point I'm also **really really** concerned about where I'm going to be... **headed** for, and sort of look at things and saying, 'well I need to know how to be an F1'.*

*Carl: It's working towards being a better doctor. Being someone that **knows** what they're doing...working towards being an F1. A **good** F1.*

Related to the goal of becoming a junior doctor was the motivation to pass assessments and qualify as professionals. Interestingly, the participants frequently juxtaposed this goal of passing exams with becoming a proficient FY1 doctor. This was despite the explicit intention of the medical school to use assessments for the purpose of ensuring readiness to commence work in this role. Indeed, the goal of passing exams also appeared to take precedent over the goal of becoming a doctor, where it was considered that one could not be achieved without the other. This tension is less evident in other studies, where through clerkship experiences students' motivation transitioned away from exam motivation to wanting to perform well as a clinical doctor (Kay et al., 2019, Brown et al., 2023). However, the primacy of the motivation to graduate and pass examinations is well established in the literature (Pelaccia and Viau, 2017).

Max: They were all, they're all part of the overall learning goal of trying to, I don't know, trying to pass final year!

Tony: There's the exam side of things and then learning to be doctor kind of things. That are very much, in opposition at this point.

Furthermore, the participants dichotomised these two goals and frequently categorised activities according to whether they served the goal of becoming a doctor or passing exams. The latter was a frequent justification for spending time away from clinical environments engaged in private study (see Section 6.4.2).

Charlotte: It's like the balance of like preparing for finals and preparing to be an F1. And they feel very like conflicting at the moment!

The role of assessment as a motivator is described in more detail in the subsequent Section 5.7.3.

Finally, despite the increasing focus on 'self-regulated learning' and 'self-directed learning', the participants were circumspect when it came to describing their individual goals for learning. Specific learning goals were expressed in relation to the achievement of discrete procedural skills, administration, exam practice and also in relation to private study. These goals were particularly motivational when translated into daily targets.

Max: I haven't really set many like specific ones, apart from like I want to do more cannulas. I need to do a catheter and things like that.

Jane: Whereas myself and the person I'm on the ward with, we've decided that every day we want to try and get a MOSLER [practice clinical assessment] done each. Just for good practice

This deficiency in sophisticated goal-setting by students is echoed in the literature on self-regulated learning (Berkhout et al., 2017a, Berkhout et al., 2017b). The predominance of procedural clinical skills and assessment based activities as goals are discussed in the relation to 'task hierarchies' which are explored in Section 5.10.3.

5.7.3 Motivational forces

In addition to explicit goals, the students described a variety of motivational forces which related to their personal values, aspirations or hopes. The following section will explore these motivators starting with those relating to specific activities and tasks and ending with the participant's outlook on their future.

Firstly, the participants described their general motivation to develop their competency in relation to clinical skills. Perceived confidence and ability in tasks increased motivation. A positive cycle of motivation was seen in relation to successful task completion. On the contrary, failure to achieve a task, or a perceived lack of ability could be demotivating.

*Tony: I had a **few**, had a few like mildly confidence boosting things this year. And, I guess it's sort of like a self-perpetuating cycle. Like, once you start to **do** something well and think, 'oh you know what, I can do that, if I **try**.'*

Magnus: There are days when you feel like demotivated or like, when you do the task wrong as well... Or you, you don't achieve the task, or something. So, I guess that kind of does demotivate you.

Research on student motivation suggests that task-focused motivational orientation can be protective against burnout during clerkships (Lin et al., 2016).

However, the relationship between ability and motivation was inherently complex. The students could be motivated by their weaknesses, inexperience, and knowledge gaps to try and improve their ability and competence. An element of this was striving for a more favourable affective state through reducing anxiety or increasing comfort.

*Patrick: If I can't do something, erm, I will **fixate** on it, until I can.*

Magnus: 'Cause that is something that I'm weak at, 'cause like if it fills you with, if it fills you with anxiety once you've done it, it stops like giving you anxiety about it. So, that's why I did it.

In relation to engagement with tasks, some of the participants' motivations were more nuanced or individual. One motivation method described was to see tasks or activities through to completion, a driving force generally recognised in the literature (Newton et al., 2020, Skinner, 2002). Contrasting with this was the motivational drive

to maximise the use of the time available and be 'productive'. This manifested as disengagement with unfavourable tasks, cutting opportunities short and finding activities to do during 'lull' periods (see Section 6.3.3 on 'cherry picking'). The importance of optimising the time spent in clinical environments is also a phenomenon borne out in the literature (Woods et al., 2011, Lyon, 2003).

*Lee: I don't like **leaving** in the middle of an operation ever. I like to see those out, because you sort of... get to see resolution of it.*

*Carl: I **can't** be standing around doing nothing. I need to be **productive**.*

For some participants, in addition to the drive to be productive was the motivation to be successful or perform at a high level. Characterisations of this included achieving proficiency in clinical practice, working effectively as a health professional and academic accomplishment.

*Jason: I don't just want to pass written papers. I want to do **well** in written papers as well...I want to do well, on exams.*

*Carl: I wanted to study hard. I wanted that stress to push me on, and then that final kind of **elation** when you **succeed**.*

The drive towards high performance and (over) achievement in medical students is well recognised in the literature (Pelaccia and Viau, 2017, Yousefy et al., 2012, Kusurkar, 2012). From this vantage, 'passing' and achieving minimal standards represents only one dimension of the motivational drive offered by assessment.

Finally, the participants were motivated according to their perceived future circumstances including life as a junior doctor and their career aspirations. The students hoped to avoid the challenges anticipated with working as a foundation doctor and as they gained more insight into this role, their motivation and mindsets towards particular tasks shifted.

*Tony: I didn't see the generic ward tasks as being that helpful, or relevant to me at the time. And now they just seem obviously really relevant...if you don't know this stuff, it's going to be really difficult for you...you're going to make life easy for yourself if you, if you learn to do this stuff **now**.*

There was a motivation to engage in activities according to their perceived relevance to their specialty interests as well as a recognition of the need to learn universal foundational skills.

*Jessica: On a most basic level, you know, we may, we generally know the **specialties** that we're interested in. So someone will come up and say, 'oh that one, this patient you'll like them! They're, you know, psychiatry! I don't want that, but I know you do! You go see them'. And I'll say, 'oh! This is orthopaedics. That's one for you!'*

*Patrick: All of us have one or two domains within medicine that we're not so **interested** in but which we, erm learn because we, we're likely to see it at some point*

Medical student specialty choice is a popular area of research. However, where prior focus has been on the experiential and personal factors influencing student choice (Reed et al., 2001, Thomas et al., 2024, Baimas-George and Vrochides, 2020, Ladha et al., 2022), this study emphasises the role specialty choice has on how students behave during placement. This is a phenomenon which is poorly described in the literature beyond recognising students' desire to have autonomy to pursue their specialist interests (Liu and Sullivan, 2021), and that students feel more energised and interested in placement experiences in their chosen specialism (Kassam et al., 2020).

5.7.4 Socially derived motivation

The students also described motivational forces pertinent to their social context in relation to altruism and social reward. Considering the former, the participants readily described a motivation of wanting to 'help' their clinical colleagues. This drive increased motivation to engage generally, as well as with specific activities.

Lincoln: I wanted to help them out. Help them with their work load.

*Carl: One of the reasons **why** I became a doctor. Because I wanted to **help**. You know, you want to **help** people, and do things for others.*

Additionally, the participants described wanting to help patients and safeguard their well-being. Interestingly, this was mostly manifest in a desire to learn to develop proficiency in caring for patients in the future, rather than through their immediate

actions. An exception to this was where the students chose not to engage with patients out of concern for their wellbeing.

*Jane: I don't want to be, like an F1 who **misses** stuff and then something bad happens to a patient.*

Jessica: I knew a lot of people had been going in to examine her, sort of for their own benefit. Erm. So obviously, you're sort of aware of, you know, is that having a negative impact on the patient?

Despite the contested perspective that student empathy declines over the course of their training (Neumann et al., 2011, Ardenghi et al., 2024, Ferreira-Valente et al., 2017), the literature suggests that students are mindful of patient vulnerability and seek to safeguard their concerns (Monrouxe et al., 2017, McDonald et al., 2021). Indeed, the dilemma students experience in 'using' patients for learning is well described (Weurlander et al., 2018).

Finally, the students described a motivation according to the social 'kudos' that came from engaging in highly valued tasks or through sharing interesting stories which appeared to form a kind of social currency.

Magnus: [describing surgical experience] But drills and nails in things! I, I don't know. I also thought it would be like, something you've achieved in the day...I thought it would have been quite cool to have done it.

*Jason: There's the patients who you like remember for a long time, and would tell people, you know, a couple of weeks **afterwards**, 'oh, I saw this!'.... you get some people doing strange amazing things, noteworthy things...But swapping stories...maybe not shocking but, you know, funny and that kind of thing. Funny for a general audience.*

The complex nature of peer social dynamics is highlighted in several studies (Bransen et al., 2022, Berkhout et al., 2017a). Of particular relevance, Lovell et al's work on medical student social identity and groupings recognises the complex processes of social comparison including the student tendency to dramatize their experiences and share these as part of regular social interactions with medical and non-medical friends (Lovell, 2015).

5.7.5 Emotion associated motivation

The role of emotion on decision-making has been described in detail in Section 5.6. This section considers specifically how emotion, and affective states can be motivating and demotivating influences. A distinction worthy of consideration is that of ‘extrinsic’ and ‘intrinsic’ motivation. According to this framework, intrinsic motivation is linked to personal enjoyment and interest (Augustyniak et al., 2016, Morris et al., 2022), whereas ‘extrinsic’ motivation is related to the desire or obligation to achieve a particular goal (Morris et al., 2022). The former has been associated with improved academic performance and superior study strategies (Yousefy et al., 2012, Kusurkar, 2012).

Considering intrinsic motivation with respect to this investigation, the participants described how enjoyment motivated them to remain engaged in clinical tasks and in the clinical environment. Some participants described the study of medicine as intrinsically enjoyable, whereas others derived enjoyment from specific tasks or occasions. In particular, contributing to the clinical team or to the workload was intrinsically satisfying and motivating for participants.

*Lee: That was in surgery which was a really big case. But I was really enjoying it, and I was enjoying being there, so I just **stayed**.*

Charlotte: It actually makes your day a lot more enjoyable if you feel like you're useful?

However, the motivation to engage with pleasurable activities could cause disengagement from the workplace. The absence of enjoyment from clinical opportunities at times drove students towards alternative activities, such as private study in the library. The motivation to engage in ‘fun’ activities was also cited as a reason for leaving the clinical environment early or even not to attend placement at all.

*Harriet: Things like, that you want to leave early for, and it's not necessarily like medicine related... Like you've got something **more important** [laughs] or like **more fun** to do?*

*Jason: If we could all **skive** like together, then it's fun...we all skived and went to Alton Towers! And it was probably the best day of third year actually!*

The students also described circumstances where negative emotions motivated them, consistent with 'extrinsic' motivational drives. The students were motivated to overcome their fears, weaknesses and perceived gaps in knowledge. The latter could drive them towards pursuing private study in preference to clinical learning, particularly where they feared exposure to others.

Tony: I'd always been terrified of writing in notes and things when it's all a bit fast and rushed. So, I was kind of keen to kind of volunteer myself for that.

*Jessica: I maybe **do** go home. And read about things. But that's because I'm **scared**. That it's going to come up tomorrow... So, you know, obviously fear is a motivator!*

That students are acutely cognisant of their knowledge gaps, and that this constitutes a significant motivational driver to learn is something identified in the literature (Prince et al., 2000, Godefrooij et al., 2010). Indeed, states of stress could act both as an extrinsic motivational driver but could equally be demotivating for students and lead to reduced engagement with opportunities.

*Charlotte: 'Oh, God! I'm really stressed about finals. Must, like, do everything I can to like **learn** things.'*

*Esme: Go into uni with a negative attitude, or resent it!...it's been predominantly negative because of the like **stress** of the situation*

Indeed, the evidence from the literature suggests there is a complex relationship between the experience of stress and motivation for students which is partly dependent on the context and the individual (Yoo and Marshall, 2021, Park et al., 2012). Furthermore, research on student feedback-seeking behaviour identifies that students are less motivated to approach colleagues if they are in a negative affective state (Bok et al., 2013).

To conclude, negative and positive affective states were associated with both motivational and demotivational forces. Positive emotions such as joy and pleasure

were generally associated with intrinsic motivation to learn but could also divert participants away from their studies when this was derived from external sources. Negative emotions such as fear and stress were associated with motivation through extrinsic mechanisms – directing students towards achieving their goals through private study or engagement in the workplace. However, states of anxiety could also be profoundly demotivational in the context of pervasive or overwhelming stress.

5.7.6 *External circumstances relating to motivation*

Circumstances external to the student's immediate experiences on clinical placement were also highly influential in determining students' motivation to remain in clinical environments. The drive to develop a life outside of medicine motivated students to disengage with clinical work and attend to extracurricular interests or commitments. This was offset by the fear of repercussions from the medical school which motivated students to be present for experiences, particularly when there was perceived to be robust or punitive processes for monitoring attendance.

*Jane: If there's nothing to do, and I'm sat around, I think it's more beneficial to go home and **do work**. Or not do work! And exercise!*

*Roxy: There was a bit more kind of, yeah, monitoring of what students are up to and stuff. And I think, yeah. It, it, that kind of was what gives the pressure to **stay** longer at things, even if you thought it wasn't particularly helpful or whatever.*

On the contrary, where attendance monitoring was not in place the students describe being less motivated to attend or engage.

Jason: Nobody cares about attendance, do they?... So I had one of those and had a week where I just didn't go in!

Jessica: 'I'm just going to go as soon as no-one's going to notice I'm gone'.

Indeed, the demotivating influence of lack of mandatory attendance is reflected in the literature (Farooka, 2018).

Finally, for the cohort of international fee-paying candidates, an additional motivation was to get 'value for money' from clinical experiences. However, this was not universal.

*Tim: Well I worked out how many pounds a day I'm spending to be here
...That really motivates you in the morning!*

*Esme: Being international [I] pay like quite a lot more... And I don't
necessarily see it, like personally, as I have paid that money to like **be** in
one specific place? I think that's, erm, sort of maybe a bit of a reductive
view of what you pay uni fees for.*

5.7.7 Motivation related to experiences and the conceptualisation of these

The students describe being motivated by having positive experiences which included playing an active role in patient care, demonstrating proficiency in a task or affirming their clinical knowledge. On the contrary, negative experiences and the experience of failure was demotivating, as was the lack of opportunity to participate.

*Tony: That's just like, **nice** to feel like you're actually helping. And it's good
for my motivation.*

*Magnus: I suppose there are days when you feel like demotivated or like,
when you do the task wrong as well and it creates like, I guess, a bit more
work for them as well. Or you, you don't achieve the task, or something.
So I guess that kind of does demotivate you.*

The concept that students and newly practising doctors are motivated by independence and having a sense of responsibility over patients is echoed in research studies (Godefrooij et al., 2010, Cantillon and MacDermott, 2008).

The students could also be de-motivated or motivated according to their degree of 'interest' in an activity, which relates to their intrinsic motivation.

*Roxy: People have suggested oh like, 'well do you want to go to theatre, or
shall I?' Or something. And I would say, 'you can go!' [laughs] because I'm
not that interested, not very interested in it!*

*Charlotte: And you hear someone's name and you're like, 'oh, I know that
name! They were in last week. Why are they in again? What's happened?'.
And you're more interested in it, rather than just being, like, told that this
patient had been in before, when you're like, [disinterested] 'okay. That
means nothing to me.'*

5.7.8 Educationally related motivation

The students were motivated by influences that can be perceived as predominantly related to 'education' and their status as learners. An explicit motivation by participants was the drive to 'get teaching.' Moreover, the students were motivated to engage in activities if they felt they would be rewarded by an educational experience.

Roxy: Obviously we tried to get teaching when we could.

Magnus: I've taken bloods like, done cannulas, to like save them, like, jobs to do...then they've like, given me more teaching as a result during the ward round.

This transactional nature of help echoes the findings of Kennedy et al's work of clinicians' practices around seeking help from colleagues, where provision of help led to expectations of this debt being repaid in the future (Kennedy et al., 2020).

The students were also active in seeking feedback from staff which was highly motivating when present, and demotivating in its absence.

Max: Doing a practice type MOSLER [clinical examination] would have been a lot more useful to having someone watching me and giving me feedback.

*Jason: If nobody kind of gives that time to you. Then, then sure there **might** be people with those conditions. But then, how are you going to, how are you going to learn about them?*

Research on students' feedback-seeking has elaborated the complexity of personal and social drivers on influencing students' behaviour, and highlights that the process of receiving feedback can be both motivating and demotivating in effect (Bok et al., 2013, de Jong et al., 2017).

The students expressed a general motivation to 'learn' and the perception of 'learning' from an experience motivated students to remain and engage in clinical environments.

Tim: I'm always trying to learn as much as I can.

*Jessica: I'm like, well, if I'm learning I'll stay, and if I'm not learning I'll **go** when I can.*

Finally, the programme of assessment in the medical degree was pervasive in influencing students' motivation to engage with learning opportunities and the choice of activity. The stress of examinations was strongly influential, but there was a complex relationship between the motivation to prepare for assessment and choice of activity depending on the students' priorities and perceptions about what made them exam ready. One element of this was the drive to leave the clinical environment and engage in private study either in the library or at home.

*Esme: The placement's useful for learning to be a doctor, but then I needed time to **study**. To pass my exams as well.*

Magnus: Writing a discharge summary's probably not something that's going to come up that much in Finals [exams]... I feel like it's less of a priority right now.

However, the participants were also clear about occasions where they believed examinations were not motivating their behaviour or having an influence on choice of activity. This was particularly evident in the advent of the COVID-19 pandemic when the examinations were cancelled.

Nile: I don't have a MOSLER [practical examination] coming up... for a little while. So. Erm. So that wasn't really on my mind when I was on the ward yesterday.

*Carl: I did med school because I wanted to **learn**. So, I'm not going to stop learning now... Because there's no exams.*

Finally, the participants described experiencing motivational direction from their 'logbooks' which mandated in course assessment from other staff members and required the students to keep a record of their clinical experiences. These were often used to set the student agenda for their time on clinical placements and arguably led to a reductionist attitude towards learning experiences, where the priority became to be 'signed off' for particular competencies.

Esme: That was always a priority, if someone asked me on a ward or a placement, 'what do you want to do today?'. I would always make them aware of what competencies I needed signing off.

Max: That was, that was very much 'log-book based learning'...I kind of just got my logbook out and just went through it and just looked through it and was like 'what can I do today?'.

5.7.9 Conclusion

The participants' learning goals functioned as motivational drivers and were centred around personal comfort, passing exams, and functioning effectively in their future role as junior doctors. Motivational influences individual to the participants included those centred around their hopes, dreams, and aspirations. Emotional states were powerful determinants of motivational drive and included the 'intrinsic' motivation which comes through personal enjoyment as well as the 'extrinsic' motivation of avoiding challenge and discomfort. In addition, individual factors and external contextual elements were pervasive influencers of motivational drive. These included workplace expectations, the students' personal lives and the motivational influences pertaining to education and learning. Social determinants of motivation included a tendency towards altruism and patient welfare as well as the social reward of engaging in activities with associated 'kudos.'

5.8 Relational

5.8.1 Introduction

This section addresses the multi-faceted role relationships play in influencing student engagement with learning opportunities. Understandings of relational interactions are co-constructed from the student perspective from the questionnaire data and interviews. Additional insight has been developed through reflexively evaluating how the students engaged with each other during focus groups as well as interactions with the principal investigator.

In broad terms, the social dynamics of decision making will be explored at three levels:

- The specific relationships between students and key social groupings and how these are characterised
- Students' 'meta-relational understandings' - how they interpret and conceptualise relational interactions

- The broader social setting as a contextual dynamic

In this section, the first two social dynamics of decision making will be considered. The third social dynamic is explored in Chapter 7 which explores social influences as part of the contextual dynamics for learning.

5.8.2 Relational dynamics between students and specific social groupings

The relationship between students and specific social groups within clinical environments can be uniquely characterised. These relational norms shape student behaviour and decision-making relating to learning opportunities. Three specific groups will be considered in turn:

- Student-staff relationships
- Peer group dynamics, friendships and personal relationships
- Student-patient relationships

5.8.3 Staff-student relationships and staff-community dynamics

Introduction

Although the students interact with a broad range of staff members in clinical environments, only their relationship with medical staff is described in rich enough detail to be characterised. Moreover, the nature of their relational status relates to the training hierarchy with differential relations with consultants (senior decision makers), recently qualified junior doctors (near-peers) and specialty registrars (middle-grade training doctors with several years of experience). The latter group appeared to be of least significance to the participants.

Features in common to student-staff relationships

When considering the interaction between different staff groups and students, this study suggests there are features common to the relational dynamic of each grouping (see Figure 19).

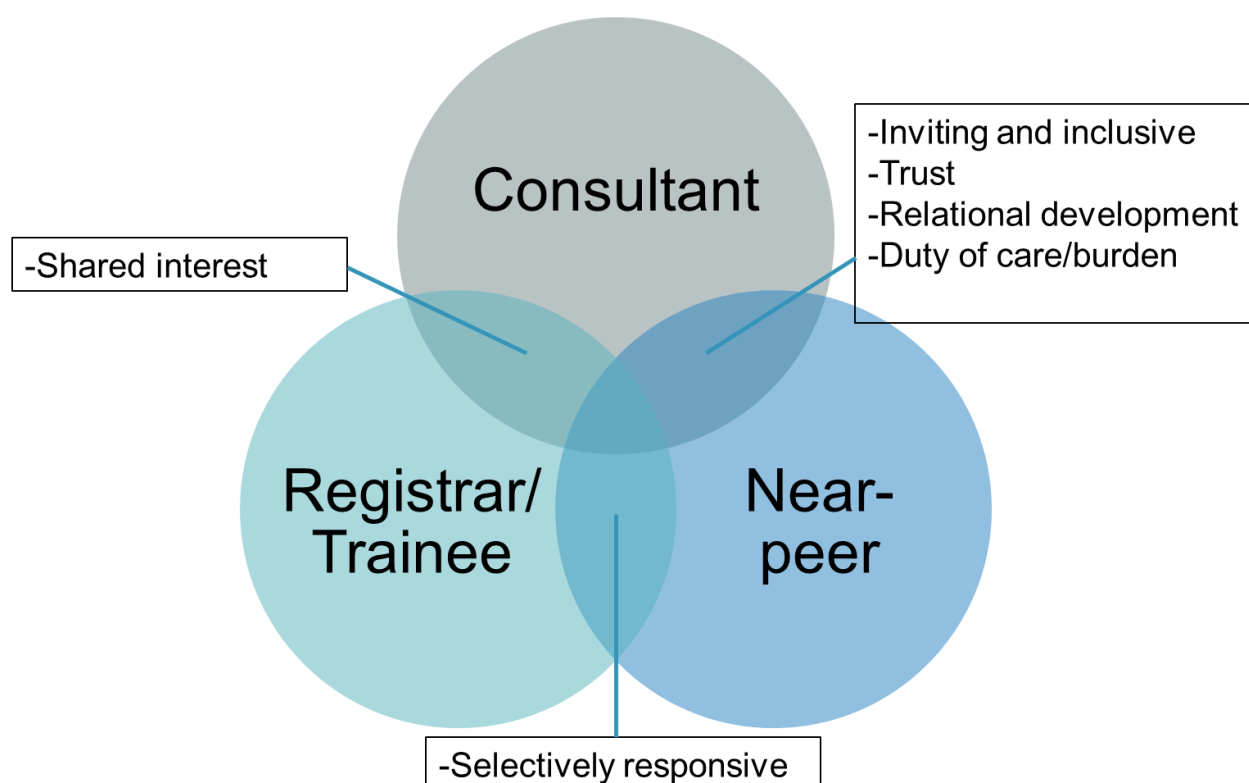


Figure 19: Shared relational characteristics between students and registrar/trainees, consultants and near-peers

Figure 19 Legend: The three circles represent the three groups of staff that students typically engage with. In the boxes are highlighted the overlapping characteristics of relating to these staff groups. These concepts are explained in more detail in the main text.

For both the consultant and registrar/trainee doctor, an important dynamic of the relationship is whether the student shares - or purports to share - an interest in the specialism of that professional. Students describe a correlation between the degree of interest expressed in a doctor's chosen specialism and the positivity of the relational dynamic. Moreover, cognisant of this phenomenon, the participants describe faking or exaggerating an interest in a specialism in order to boost the strength of the relationship. This is discussed further in the next chapter in relation to strategic relational manoeuvring (see section 6.5.2).

Magnus: I really don't like orthopaedics but I, I was like, 'oh yeah! I find it really interesting'... I never say that a subject bores me because I think that would be quite demotivating for them.

Students additionally tend to comply with the authority of consultants. This sense of direction and control is present to a lesser degree with student-near/peer and student-registrar/trainee relationships. In the latter, students appear to selectively follow advice or suggestions given according to their own agenda or purposes.

Roxy: Sometimes consultants are a bit more kind of like, 'you'll be doing this this morning'.

Charlotte: She [junior doctor] was like, 'do you want to ring micro?'. And I was like, 'nope!'.

This finding relates to the literature where students are likened to 'tourists' with the power to selectively engage with what they chose (Deketelaere et al., 2006, Liljedahl et al., 2023).

Finally, shared elements between student-consultant relationships and student-near-peer relationships include an inviting and inclusive dynamic; the evolution of trust and relationship and a sense of duty of care or burden from the relationship. Considering the latter, students' self-conceptualisation as 'being a burden' does appear to derive at least in part from students' relational interactions.

Magnus: They kind of want to get on with their own work and [laughs] wanting to get rid of you.

*Charlotte: And I was like, 'I can go and see them. If anything's changed I can tell the doctors.' And...they'd **trust** me with that.*

This resonates with the work of Hagg-Martinell where the importance of being 'invited and involved' is emphasised (Hagg-Martinell et al., 2017). It also draws parallels with Ten-Cate's model of 'entrustable professional activities' where tasks of increasing difficulty are allocated to trainees as trust develops in the relationship (ten Cate, 2005).

Contrasting features of staff-student relationships

Other elements of the student-consultant and student-near-peer relationship appear juxtaposed, or differently characterised. This is outlined in Figure 20.

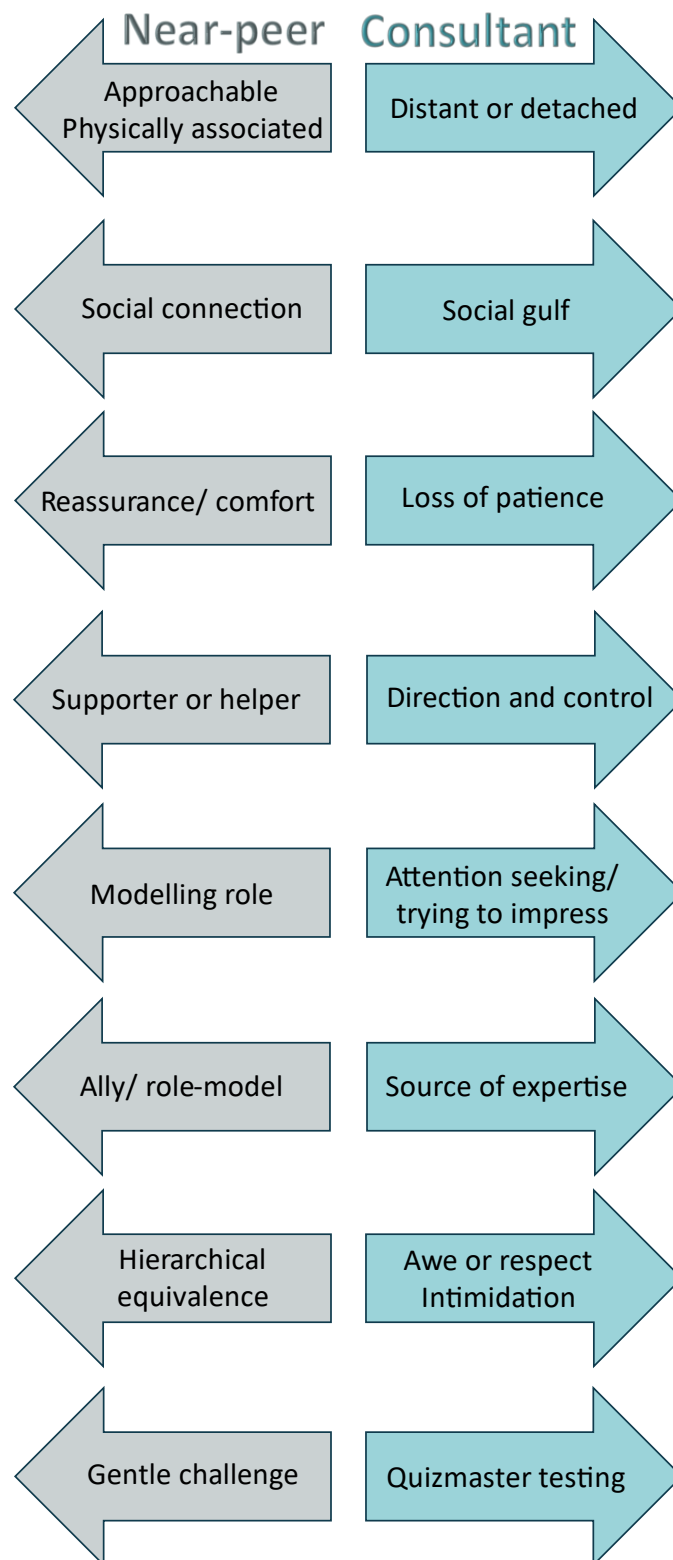


Figure 20: Contrasting relational features between student and near-peer and student and consultants

Figure 20 Legend: The arrows represent relational features of how medical student interact with either their Near-Peers or Consultants. The arrows are aligned horizontally to demonstrate how these aspects compare and contrast.

Many of these elements could be traced back to the social hierarchy and how this is perceived. For example, the hierarchal near-equivalence of the near-peer is likely associated with their sense of being an approachable 'ally' to the student and a source of support. In contrast, the consultant is perceived at the opposite end of the social spectrum which lends a sense of distance and social-disconnect. On the one hand consultants' expertise is met with respect and awe, on the other hand this is countered by a sense of intimidation. The student endeavours to impress the consultant, often exhibiting attention-seeking behaviour which partly relates to the sense of direction and control the consultant has over the student. With the near-peer relationship the dynamic is of being gently challenged, whereas consultants often take on the 'quiz-master role' and engage in questioning the student with varying degrees of intensity.

These altered relational dynamics are both explicitly described by students and directly and indirectly linked to decision-making processes about engagement with learning opportunities. Table 7 outlines some exemplary cases.

Decision	Circumstance	Relationship	Suggested associated influence
Student attends theatre instead of clinic (Magnus)	On consultant's advice, student attends theatre when their preference was to go to clinic	Consultant-student	Shared interest Direction and control Intimidation
Deliberate student behaviour to impress consultant (Tim)	Student purposefully engages in minor tasks and asks consultants questions over a sustained period to facilitate later involvement in surgery	Consultant-student	Attention-seeking/ trying to impress. Relationship development Trust

Student engages in a task prompted by near-peer (Charlotte)	A student terrified of making phone-calls attempts this when gently challenged by a near-peer because of the nature of the relational development	Near-peer-student	Gentle challenge Helper or supporter Social connection
Student chooses near-peer (Nile)	A student describes 'gravitating' to an F1 over other staff to facilitate the signing of their logbook	Near-peer student	Know or understand student needs Responsibility for assessment Approachable
Student declines activity suggestion (Harriet)	A student chooses not to follow the advice or a registrar to examine a patient with a murmur	Student-trainee	Selectively responsive

Table 7: Linking decisions made by students to the character of specific staff-student relationships

Conclusion

In conclusion, there is a complex and dynamic relationship between students and different staff members which is a key driver of their decision to engage in different learning opportunities. Relational norms can also drive student patterns of behaviour which can serve to reinforce positive or negative relational characteristics.

5.8.4 Peer group dynamics, friendships and personal relationships

The participants' interaction with their peers and the personal relationships they developed on the ward impacted on how they perceived learning opportunities, negotiated their involvement, and made decisions about engaging in activities. Peer group dynamics were influential in decision-making, as was the nature of individual relationships with peers or individuals considered to be friends.

Firstly, considering the peer group as a community there was some evidence of a 'group think' within peer groups where decisions appeared to be made collectively. An example of this is the common practice of medical students to relay beliefs and

opinions about experiences amongst the peer group which became shared knowledge and shaped expectations and behaviour (see Chapter 7).

Max: The PSA [national prescribing exam] was the main thing that made us leave this last week.

Tim: It's, just finding out from the other people what the, the high yield advice, and how to get the most out of things.

However, the participants also described making decisions counter to those common within their peer group, despite the challenge this could pose.

*Esme: There's a lot of sentiment of, erm, sort of 'I **don't** want to go to placement. Placement is a waste of my time!'... So, I was hearing that, and I wanted to sympathise and be like, 'aw, yeah, me too.'. But I was like, [in a small voice], 'I don't agree!'...it is **hard**.*

*Nick: It can be really challenging if you're with someone who has a different agenda... for example, if you're, if someone like leaves at lunch time. And then you want to stay the full day. You almost feel a bit **bad**.*

Negotiating access to opportunities was another important dimension of the peer group dynamic. There was evidence of competition between students and complex social boundaries relating to task distribution with the presence of 'rules' around who was more entitled to an opportunity. The students also tended to define and protect a circumscribed clinical area or group of patients, with disputes arising when others encroached on their territories. This subsequently influenced students' decisions to move between clinical areas. Tensions could arise if it was perceived that students were coming into conflict with the agreed social norms.

Roxy: it's a bit of a kind of competition for opportunities to learn stuff on the ward or to practise the cannulas or whatever... we tried to spread ourselves out between the three different pods on the ward, so we weren't all in each other's faces all the time.

Jessica: So, if one of you has got it signed off, and the other one hasn't. Whoever's not got it signed off will do it.

However, additionally there was evidence of collaboration between students which could transcend area boundaries. The participants also described engaging with an

opportunity solely due to peer influence. Indeed, working together could be both sporadic, or part of a deliberate plan to learn in conjunction with others. Peer interaction and discussion could challenge the participant's perspective in motivating and demotivating ways.

*Jane: I'd probably talk to some of the other students and see if there was anything on **their** ward... they could pick a patient before we come and then we can see their patient*

Max: We're all going to discuss patients on our wards and then hopefully try and as a kind of mini group go round to each person's ward and do some like, practice MOSLERs [patient exams] with each-others patients.

These findings resonate with the literature addressing peer learning, including its motivating influence, the importance of developing relationships, the problematic influence of competition and the emphasis on learning for assessment (Kommalage and Thabrew, 2011, Tamachi et al., 2018, Tai et al., 2014, Tai et al., 2017, Bennett et al., 2017, Masters et al., 2013).

Another dimension relevant to the study phenomenon was the role of personal relationships that went beyond that of peer or colleague relations. Firstly, the participants described feeling more comfortable in clinical areas where a friend was present, which fostered inclusion and engagement with opportunities.

Jessica: I like, having a friend for backup!...I maybe feel a bit more confident sometimes.

With respect to the presence of friends who have graduated and working as doctors ("near-peer") this was described as promoting student inclusion in the team. There was also an additional onus on near-peer friends to provide teaching opportunities. One example is the impetus for a medical trainee friend ("near-peer") to provide teaching opportunities.

*Tony: It's really nice turning up onto a ward and seeing, like, one of your mates and them being like, 'oh hi Tony!'. And you just feel part of the team way easier...A friend-**ish** of mine from last year. But. Yeah, she's just happy to teach, I guess.*

Friends who were already working as doctors appeared particularly influential in providing students with a realistic picture of what their role was like. This in turn appeared to motivate participants to engage in a breadth of tasks, beyond those pertaining to their examinations.

*Nick: I've got quite a lot of friends and things, in years above who are F1s, F2s, and CT, IT1s and things. So, I think, it hasn't been a shock, a **shock** to me that there's a lot of admin... gives me a motivation for admin.*

*Maisie: I've got friends who are F1s now. And, after they started, we were like, 'what can we do to prep for being an F1'... So, I guess, the thing I was trying to do when like yesterday when I was on urgent care, is like, seeing patients as I would if I was on my **own**.*

The role near-peers play in medical student learning is well studied, with a key benefit being the strength of informal social connections, with the drawback being that near-peers are not always the best equipped or resourced to deliver teaching (Bowyer and Shaw, 2021).

With respect to obligations within peer-to-peer relations as part of friendships, there was a particular duty surrounding providing transportation for friends, which could be a motivating factor to attending placement.

Jason: [about the reason for attending placement], So I drive and I give a couple of people lifts. It just feels a bit harsh to tell them, 'get public transport'!...I don't want to disappoint other people...one of the people I give a lift to is a close friend of mine.

Further discussion around transportation challenges during placement are described in the subsequent Section 7.5.3

In conclusion, the nature of peer and near peer relations and personal friendships were broadly influential in determining student engagement with opportunities. Participants were directly influenced by the behaviour of their peers resulting in both engagement and disengagement in particular activities. Complex social boundaries between allocation of tasks and space also indirectly shaped participants' interaction with the opportunities and could be a source of tension where individuals were seen to go against the accepted norms. Finally, the special nature of friendships and

personal relationships could be particularly encouraging for students where these were present in clinical areas. They could also be a source of motivation for behaviour both as learners and as teachers, where individuals felt beholden to each other.

5.8.5 Student-patient relationships

The dynamic between students and patients in clinical areas was not well described by participants. This is an inherently interesting negative finding suggesting that this relational interaction was of less significance to student learning. Indeed, the students appeared to see themselves at a power advantage to patients, which could result in them engaging with patients in a more circumspect and less holistic way (see Section 6.4.2). Recognising this trend, other participants sought to engage with patients on a more personal level to compensate for behaviour which treated patients as a commodity.

*Jason: I wasn't **really** speaking to them. I just wanted to listen to their hearts to hear what their murmurs sound like.*

Jessica: I think, you know, just because obviously I knew a lot of people had been going in to examine her, sort of for their own benefit.... But then just obviously afterwards I was like, 'well I know a bit about you. But it would also be good to sort of sit and ask how you're doing.

Concern about the burden to patients in being used for student educational gain is something which is described in the literature (Prince et al., 2000, Weurlander et al., 2018).

Furthermore, although the students felt disparate from the provision of patient care, they appeared to be more engaged where there was continuity of care and felt rewarded in experiencing the whole patient journey.

Nick: When it came down to seeing patients independently, I think we felt more confident in seeing the patients that we'd already seen.

*Lincoln: I suppose it's always quite, quite **happy** when you get to discharge a patient...you follow, follow them through, yeah.*

This finding points to the value of ‘longitudinal placements,’ the study of which suggest prolonged exposure to environments facilitates the development of relationships with patients and staff-members and promotes student engagement (Richards et al., 2022, Roberts et al., 2017).

5.8.6 *Meta-relational dynamics*

The participants’ perspectives and interpretations of their relationships with others could also be inherently influential on their engagement with learning opportunities. The students anticipated staff members’ expectations of them, which they used to modulate their behaviour both in relation to engagement, such as asking questions, and disengagement, such as leaving the clinical environment early.

Jason: I just say, ‘I need to go’. And everybody always accepts that...Because nobody cares whether you’re there or not!

Lee: So, I just thought ‘oh, people that are there to teach me, they want me to ask questions’.

The participants also demonstrated remarkable insight into the staff member perspective of common student behaviours, and as such modified their patterns of engagement and approach to be more favourable to staff.

*Nick: When I come back after lunch, I don’t have to say like, ‘oh, like, is there anything for me to do this afternoon?’. Because when you ask that question, I think, I feel sorry for the doctors when they have to answer that. Because, where do they even **start** like.*

*Max: I can imagine being a consultant and there being someone standing in the corner just looking bored, it isn’t, it means you, it’s kind of like a little vicious cycle where they don’t get you involved, you look bored and don’t try and get involved, so then they think you’re bored and won’t get you involved more and then you’re just stuck in a whirlpool where you just don’t.. **do nothing**.*

Finally, the students took efforts to understand the limitations and restrictions of the staff roles in terms of accommodating students’ needs versus managing their workload. One dimension of this was a commonly conveyed ‘uncritical’ stance towards staff behaviours in the face of unfavourable treatment.

Tony: When there's two consultants on the ward and there's lots of jobs...I think it feels like there's a bit less time for me...Which is completely understandable.

Jason: Like you are standing silently. You might be like, 'well, they are particularly busy. You know, they're not bad people because, you know, erm'. Or, 'they do try'.

This is of particular relevance to student engagement, where the tendency towards acceptance rather than challenge could perpetuate states of disengagement and lack of involvement.

5.8.7 Conclusion

The nature of student relationships with staff, peers, patients, and the workplace community were broadly influential in determining their engagement with learning opportunities. Relationships with staff members were complex and experienced differently according to their level of seniority, where student engagement was shaped by varying degrees of control and influence. Peer and near peer relations and interactions directly influenced students' decisions to engage and disengage with opportunities, where participants could be seen to be led by the choices of others. The student relationship with patients was less well defined, and the participants seemed to be failing to capitalise on the potential learning opportunities available through holistic engagement with patients. Finally, the students were mindful of their relationship status with others, and this awareness led to both positive and negative patterns of engagement with opportunities according to the situation.

5.9 Role, agency, autonomy and independence

5.9.1 Introduction

This section addresses the nature of the student role in clinical environments, with an emphasis on their degree of independence and sense of autonomy over their activities. Key points that will be addressed include the extent to which students are self-sufficient in the workplace and the role of mediation and learning support. The

student role will also be examined from the perspective of the nature of the participants' agenda and the factors underlying this.

5.9.2 *Independence and external mediation*

With respect to the students' operational independence, there was a myriad of examples of the participants engaging in activities independently. This included reviewing patients, completing clinical tasks, and engaging in workplace rhythms. The students explicitly recognised increased autonomy as a positive and motivating practice and felt they had a degree of control over their choices.

Roxy: You have a lot more autonomy in... we've got to a stage where we think, 'I'm not going to stay with this if it's not useful' or whatever.

Tony: It's just sort of like, what you decide to do. Erm, out of the choices that are there in front of you. And you can say 'no' to doing things and you can say 'yes' to doing things.

The counter to this was an even more prominent phenomenon of the students requiring external mediation to engage in tasks. This role was provided by numerous staff from both medical and nursing backgrounds. An important facet of this for students was that in the absence of a mediator, they would become inactive and disengage with opportunities. This dependence also limited their proactivity in engagement.

*Tony: All you need is just that one person who's sort of, erm, **helping** you... You need somebody, need someone to tell you to go and do something!*

Jason: You have to have people who are keen to teach. And, if it feels like you're not wanted then there's no point being there.

The dependence from students on external facilitation to support engagement with opportunities is well established in the literature (Karani et al., 2014, Steven et al., 2014, O'Connor et al., 2017), for example Talib et al's work where students describe feeling an outsider until they were invited to take part in activities (Talib et al., 2024).

5.9.3 Agenda

Finally, in relation to the student agenda, this was a mix of internal and external influences. In some circumstances the agenda for student activity was self-determined. The students were conscious of their internal aims, which at times could be controversial according to placement learning objectives or workplace demands.

*Esme: People even who would say, 'well, erm, I'm on medicine, I know it's a ward round, so I'm just not going! I'm **never** going on **any** medical placements!*

*Tony: I've kind of got my own different agenda, like that's their **job** and I've got my stuff to do. And I need to go and work and see patients and, if there isn't much happening then I might go home and do some like studying by myself. But doing lots of discharge letters, or doing lots of admin, it's a kind of less **useful** use of my time.*

Moreover, for many participants there was also significant doubt and/or lack of self-awareness regarding what should be on their agenda. This may in part relate to the challenge in explicitly describing an implicit phenomenon (Eraut, 2010a), but may also indicate the reliance on external influences in determining their action.

*Lee: So, when everyone sort of like stands up and walks away with a purpose, it's pretty easy to see the med students **don't** have a purpose.*

Carl: And the consultant that day was really good too. He actually asked me what do I want to know. And I said, well, 'everything and anything!'

This resonates with the prior concept in this study where students lacking defined learning goals (see Section 5.7.2), something which is also resonant in the literature (Berkhout et al., 2017a, Berkhout et al., 2017b).

5.9.4 Conclusion

The nature and degree of student independence when learning in clinical environments is an important influence underpinning their decision to engage with opportunities. The participants describe a sense of autonomy over their activity patterns and the freedom to set their own agenda. However, contrastingly there was also a prominent theme of requiring external mediation to engage in opportunities.

Additionally, the student agenda in clinical environments was at times amorphous and open to external influence and control.

5.10 Context, norms and structures including navigation norms

5.10.1 Introduction

This section explores the influences on student engagement which derive from the norms and structures which form the architecture of the students' learning in the workplace environment. This includes the norms which have evolved around how students engage with opportunities as they arise, including their own role and the influence of staff, students, peers, and aspects inherent to the opportunity. The influence of the overall situation and circumstances for learning 'the context' is explored in brief, as this is elaborated in Chapter 7 which specifically focuses on contextual influences.

5.10.2 Normative structural arrangements

Chapter 4 paints a picture of the typical student day and the activities which characterise this. However, this section addresses how individuals are impacted by cultural and social influences as well as the physical arrangements for their learning. The following discussion provides colour and substance to the circumstances for learning, and highlights where these have an impact on student engagement.

Physical aids which promoted student engagement with opportunity included access to IT systems and access to patient information such as notes and 'handover' sheets. The students also utilised their own physical resources to scaffold learning with an emphasis on the importance of their personal notebooks and 'jobs lists' in facilitating learning.

*Harriet: I can't like look down the jobs list and be like, 'oh this person needs, like, this chest x ray ordering'. I can't, **I can't do that.***

Nick: The patients list... having one of those when you don't know the patients is really helpful.

The role of physical arrangements in influencing student engagement is discussed in more detail in Chapter 7.

Norms around the care of patients also influenced how students engaged in learning opportunities. The need to preserve patient safety and the precedence of patient care over learning was accepted by students but also perceived as a barrier to learning where service needs were particularly demanding.

Lee: Everyone's busy with the job, and like, the patient comes before the teaching. Which is fair enough, 'cause it should do.... you don't really want to affect patient care negatively by you trying to distract somebody.

*Jason: Because you're the lowest priority because they **need** to get everything done. And I totally understand that.*

The tension between service provision and educational provision is well described at both an undergraduate and postgraduate level (Park et al., 2023, Galvin and Buys, 2012, Hoffman and Donaldson, 2004).

Another norm related to the patient care was the concept of 'patient ownership', the sense of having responsibility over care of patient and that they are intrinsically 'linked' to you (Kiger et al., 2019). In relation to navigating opportunities, the students felt that they had more 'claim' to opportunities pertaining to patients they considered their own and felt more invested and motivated to be part of their care.

Jessica; I'd already erm, seen the patient...[he said] 'they need a catheter don't they!'. And I was just like, 'yeah. It's mine!'.

*Maisie: Nobody else saw her apart from **me**!...So, kind of, doing that whole... 'patient is **mine**' kind of thing was quite nice.*

In relation to staff, the key norms included navigation of the medical hierarchy and the role of teamwork. In general, the students perceived themselves to be 'low' in the hierarchy and this negatively impacted on their opportunities to engage with workplace activity. On the contrary, feeling part of the clinical team and engaging in teamwork was valued and motivating. These two concepts were inter-related where the students felt they could engage more in teamwork if it was only the junior doctors present.

Magnus: As a medical student you always feel quite low down in the hierarchy anyway, because like, you're probably the less, the less useful.

Tony: When it's just the juniors I feel much more part of the team. It's very much just like, 'I'm going to see these patients and you see those patients.

These findings resonate with the literature on team-working and the medical hierarchy within medical education which are significant areas of study outside the scope of this thesis (Vanstone and Grierson, 2019, Baird et al., 2016, Chakraborti et al., 2008, Lingard et al., 2012).

Finally, other norms for students during clinical placements were those existing around the processes of teaching and learning. Clinical scenarios which varied were seen as a springboard for learning, with the quality of experiences partially determined by the nature of clinical supervision as well as the event in question. In the specific case of the medical ward round, norms for students included being given the opportunity to examine patients, being questioned on patients that have been seen or having information relayed about the patient or a condition which was perceived as teaching.

*Roxy: You sort of need a bit of a [exhales] I think on wards you quite often need a bit of a clinical scenario for them to teach **from**.*

*Max: [regarding the ward round] If you **show** interest and show that you're wanting to **learn** then, I've found that often, you know, maybe in between patients or in between bays they'll... 'hey, student! Come over here' like 'so what do you think about this then?'.*

Student engagement with these opportunities varied according to the nature of the experiences and their own beliefs and behaviours. For example, the subsequent chapter will explore in more detail how students attempted to transform their learning experiences through intervening with questions during ward round and trying to demonstrate their engagement (see Section 6.4.2).

5.10.3 Navigation norms

This section addresses the norms in the ways in which the participants perceived and approached learning opportunities in conjunction with social influences.

Firstly, there appeared to be a hierarchy of desirability in relation to tasks or experiences that students could get involved in. Clinical procedural tasks and

'clerking patients' were highly valued tasks, whereas the students could be avoidant of opportunities perceived to be over or under challenging.

*Patrick: **Personally**, as a goal, I'm always looking towards trying to get good at cannulation. 'Cause it's an area of, of improvement for me.*

*Harriet: [about avoiding making phonecalls] I just feel like it's **hard** to.*

*Like. You kind of **can't** really.*

A participant's likelihood to engage with a learning opportunity was also determined by their role. In some cases, the students felt that they had no role at all. This role uncertainty is described in other studies of third and fourth year medical students undertaking clinical placements (Konkin and Suddards, 2017, Godefrooij et al., 2010). At other times, there appeared to be boundaries created around what the student role should or did entail. Moreover, there was tension as to whether students should be involved in managing the clinical load and their workload was perceived differently. In many cases, the care of patients appeared to occur in parallel to the student functioning. An exception to this was where the student was 'acting up', acting in the role of another or completing clinical activities which contributed to patient care (see Figure 21).

Figure 21 Legend: This schematic represents defining characteristics of the student role working on clinical placements. Different colours and areas of the chart are assigned to different concepts which help define their role. Illustrative quotes are mapped to each area. The central figure demonstrates how the student role primarily relates to the student workload. Key to this concept is that students are primarily focused on learning during their placement rather than providing what they consider to be 'service provision' through engaging in activities surrounding the care of patients. Furthermore, the other side of the diagram illustrates the sense that students can have 'no role' whilst on clinical placement. Above this central image the surrounding line demonstrates that students' activity is tightly controlled according to limiting factors and as such is subject to 'boundaries'. The vertical lines illustrate their separation from patient care. Bridging between these boundaries and patient care is the concept of students 'acting up' in clinical roles, which is a way of them overcoming boundaries to their patient-related role.

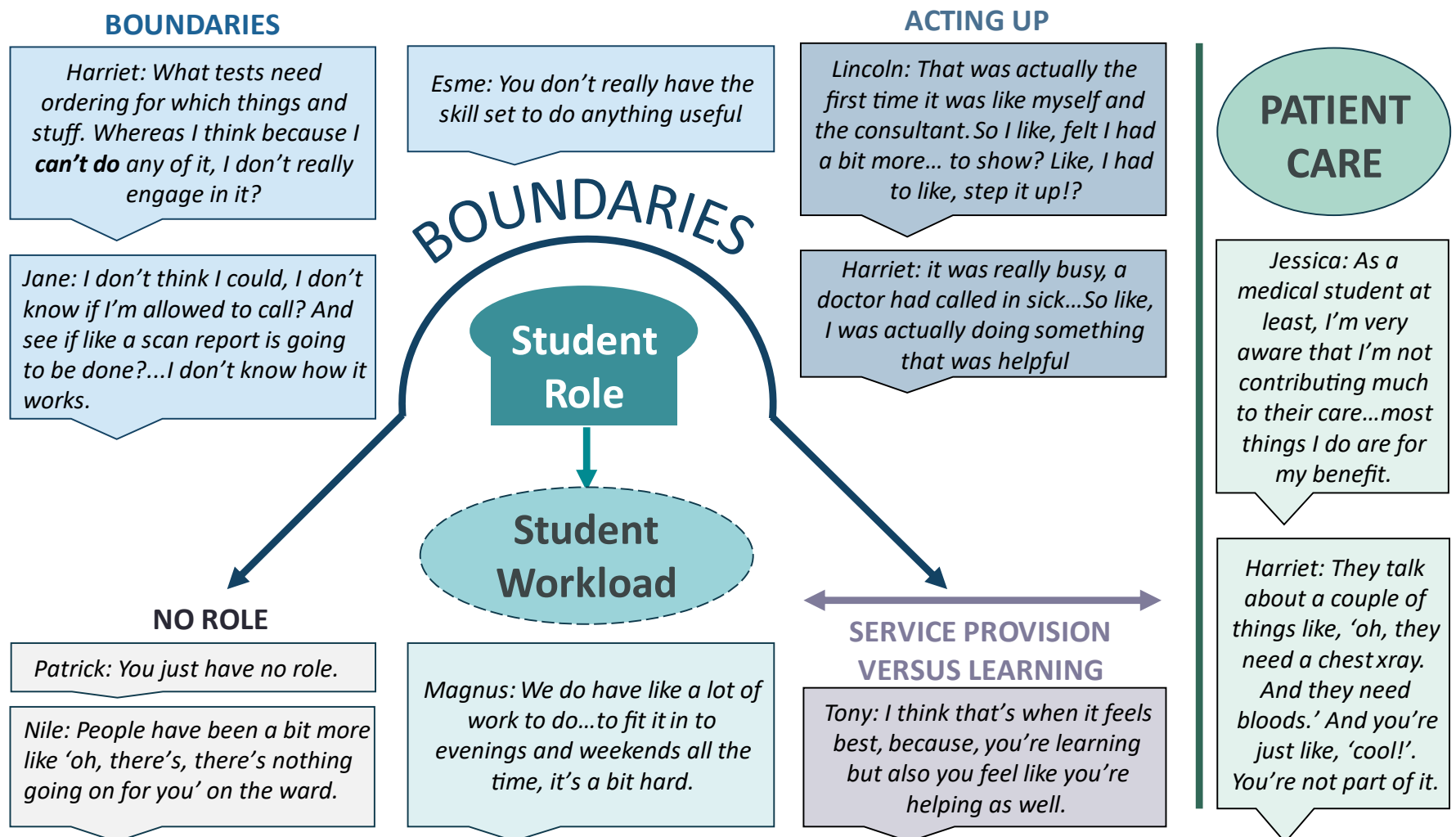


Figure 21: Map of boundaries to the student role

Staff influences also modulated the participants' approach to learning opportunities and their conceptualisations of them. As a general principle, the students sought permission, advice or facilitation from staff members to identify or become involved with activities or tasks. This process of approach itself was also often strategic. The students purposefully engaged staff members whom they felt were more receptive, and were opportunistic in the timing of their interactions in order to secure commitment or advice.

Patrick: Well, it's largely depends on who has shown an interest in you so far in that day?...you're more than likely to sort of approach them or try to talk to them and see if, like, they have anything further, erm, that you can do.

Roxy: If I meet the staff in the morning and say, 'oh if any cannulas come up, do you mind just grabbing me or the other student and we'll take it in turns to do them?'...if the doctors seem a bit like short tempered with having students around bother them, it might make me a bit less inclined to ask?

Other norms around the approach included the perception that the students felt they needed an 'in' with staff members to segway into a request. The logbook was described as a way of achieving this, as well as mediation from other staff members.

Nile: it's nice going through and kind of ticking them off and it is something to, it's a, it's a, almost an 'in' with someone, if it's like, 'oh I need to get this done, can I, can I do this?'.

Harriet: It was like the CT [trainee doctor] who asked the consultant if I could go with them.

Asking questions of staff members was also a pattern of behaviour utilised to try and secure staff attention (see Section 6.4.2).

The perspective of staff also influenced students' perspectives on the learning opportunities available either by encouraging or discouraging their involvement with certain activities according to their own judgements. One norm discussed in more detail in the next chapter, is the pattern of behaviour of students approaching staff members to direct them to patients judged to be appropriate or otherwise desirable by staff members (see Section 6.4.2).

Patrick: I always will see, if someone in the medical staff tells me to see this patient, they're interesting.

Carl: He goes, 'there's something really good just go, go and speak to that patient over there! There's something really interesting'.

The students also describe that staff members would censor opportunities if they believed them to be uninteresting, challenging, or unfavourable in some way. Indeed, this was cited by some students as an excuse for not engaging with some of the typical activities undertaken by junior doctors. A common theme was staff members warding students off activities they predicted or considered to be 'boring'.

Tony: [about making phonecalls] It seems quite intimidating. So, I don't know if, they're sort of, 'let's not offer this to Tony because it's a bit scary'. [about discharge letters] whoever's supervising you or teaching you, think, 'ah, they won't want to do this. This is boring.' Then you'll never learn to do it.

Nile: I don't think I've ever, they've ever offered for me to do a discharge letter... I don't know if they see that as a bit more of a boring task

Staff members also frequently directed students to leave the clinical environment or encouraged them to engage with private study rather than clinical learning (see Section 4.4.1). This resonates with Konkin's study of clinical learning, where especially in sub-specialised areas, staff encouraged students to study from books rather than patients (Konkin and Suddards, 2017). Interestingly the GMC guidelines for clinical placements also encourage doctors to allow students to have time for private study in clinical areas (General Medical Council, 2022). The impact of this behaviour from staff could be perceived as contributing to the previously described 'boundaries of student activity.'

Finally, the students also describe peer influences impacting on their norms around navigating learning opportunities. Examples included giving recommendations based on their experience, sharing learning strategies or techniques, and advising or directing peers in what they should do. This is described in more detail in Section 5.12.5 and Section 7.8.4.

5.10.4 Context

The relevance of contextual features to the study phenomenon was highlighted by this phase of the study and prompted design and execution of the next phase summarised in Chapter 7. However, a few elements were primarily described in the interview data which will be summarised here.

Firstly, transport arrangements were particularly significant and where participants would often be living at a distance from their placement location. Deficiencies in public transport often led to students being reliant on each-other for 'lifts', the opportunity to travel in another's car. This was a socially complex phenomenon and was significantly influential in determining students' time on placement, for example, whether they felt obligated to stay on placement until others finished, or the counter experience where they felt pressurised to leave early.

Lee: Travel is absolutely nightmare-ish [laughs] If you're not car sharing.

Jane: If they were giving me a lift then I'd have to leave early, even if there was stuff to do.

Another wider influence was the weather which in the study setting could be highly variable. Adverse weather conditions led to staff shortages and might promote student engagement in different roles. The desire to make the most of good weather was also described by one student as a motivation to leave a placement early.

Tony: Then I might think, you know what, I'm actually going to go take off now. Because there's not much to be doing, and I want to get there as soon as possible. If it's a really sunny day!

This finding resonates with other studies which suggest absence increases in favour of leisure time in times of hot weather (Zivin and Neidell, 2014, Conte Keivabu, 2024).

In relation to students' personal lives, having extra-curricular interests or commitments were an additional pressure or influence enticing students away from clinical environments.

Jane: And then say if things are happening, like in the evening. Like, I'm in a uni society which takes up time, or... I have a part time job... then my time would be better spent doing that?'

Tony: I like going climbing in the evenings. If I know that, erm, the climbing wall's going to be really busy that evening and I'd like to get there a little bit earlier.

The tension experienced by students in balancing extracurricular activities with the medical programme particularly during clinical clerkships is recognised in the literature (Kay et al., 2019, Achar Fujii et al., 2022, Dunham et al., 2017).

With respect to medical school curricula, the students describe being influenced by the course learning objectives, particularly the 'core conditions'. In the study context, these were medical problems which the students were expected to learn and were examined on. The participants describe becoming focused on these pathologies, rather than the holistic management of the patient.

Tony: That was just how the curriculum worked...not necessarily looking at patients as much as patients...There was a lot of emphasis on core conditions and core presentations.

Carl: Look at the learning outcomes, core conditions, and what I need to know and what I haven't looked at. And I'll just work through that book.

This relates to the wider problem of students' selectivity in relation to patient selection, the focus on pathology and the 'tick box' approach to learning described elsewhere in this thesis.

Finally, the timing of circumstances was a relevant contextual factor, with different student attitudes towards engagement depending on the time of day, or day of the week. The students also describe differential engagement depending on whether they were at the beginning or end of placement, and the proximity to summative examinations and graduation.

Nick: On the Fridays, [everybody] probably goes a little bit earlier.

*Magnus: I was like, I'm just not like, **not waiting four hours** 'cause at the moment it's 2 o'clock [am] to go and listen to a murmur.*

*Jane: When exams come up later in the year, like MOSLERS [practical clinical exams] and stuff, I'd probably be going in **more**.*

The timing of examinations with respect to clinical placements is of increased academic interest, with a trend in the UK towards bringing forward final summative examinations so that students engage better with apprenticeship type experiences (Kraakevik et al., 2023, Brown et al., 2023).

5.10.5 Conclusion

Participants' decisions to engage in learning opportunities can only fully be understood by appreciating the architecture of their experiences. This includes the norms and structures relating to the workplace function and how this intersected with students' roles as learners. Pertinent features included the nature of supporting physical elements and the social dimensions and norms relating to teaching practices and the impetuses for learning. In terms of how students navigated learning opportunities, this was partly determined by the norms and structures defining their roles as well as social influences and participants' perception and stratification of learning opportunities. Finally, features pertinent to the context for learning both in and outside of clinical placement were significantly influential in impacting student engagement.

5.11 Conceptualising experiences

5.11.1 Introduction

This section addresses students' construction of reality according to their workplace experiences and the implications for decision-making and engagement. The participants' use of language to conceptualise their experiences is related to their individual values and how learning opportunities are evaluated. This is referred to as 'general over-arching conceptualisations of experience' and labels are grouped according to whether they are considered positive, negative or neutral/ambivalent. Feeding into these overarching perspectives, experiences are viewed from the perspective of the phenomenon as broadly focused on the clinical activity being undertaken, a social interaction (or lack of this) or the individual's personal experience. These are outlined in Figure 22 and will be considered in turn.

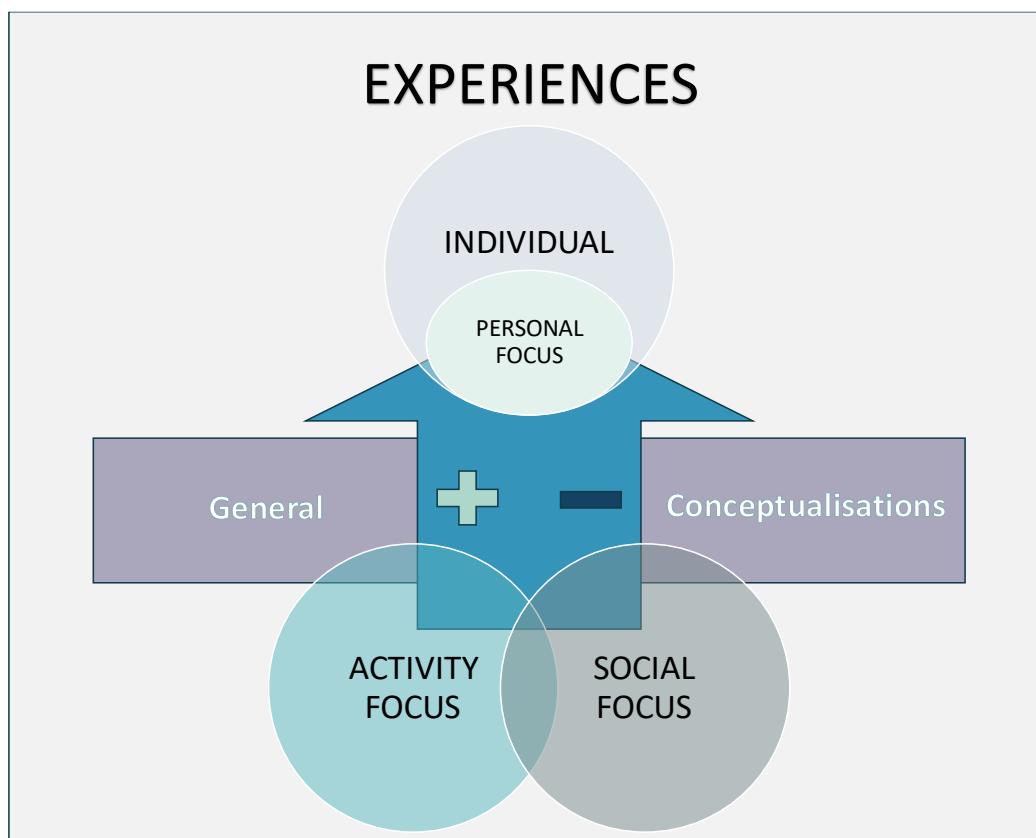


Figure 22: Student conceptualisations of their experience

Figure 22 Legend: This schematic captures how students conceptualise their experiences on placement represented in the grey rectangle 'general conceptualisations'. Superimposed on that is a blue arrow which demonstrates that experiences can be considered broadly negative or broadly positive. Conceptualisations can then be further sub-categorised according to whether they centre round a social experience, an activity, or something individual. Some individual experiences are of particular personal interest to the student as represented by the light green circle 'personal focus' within the larger 'individual' circle.

5.11.2 Extracting from experiences

Consistent with the pattern of behaviour 'cherry picking' the students had a tendency towards describing experiences according to what they perceived to gain from them. What was 'extracted' determined an experiences' value and influenced the decision to engage. Furthermore, this conceptualisation pre-empted a student's response to opportunities from the outset.

*Carl: I got so fed up I just walked out and went and done my own thing.
Because I wasn't getting **anything** from the morning, from the day.*

Charlotte: It's more about like, what I'm going to get out of my day. Rather than, 'this is what I've got to do today'.

An example of an activity where the students didn't feel they were gaining anything was when they perceived themselves to be 'waiting'. Many participants considered this to be a 'waste of time' and associated it with disengagement though others were more accepting of this.

*. Harriet: A lot of it's just like **waiting around**. There's a lot of wasted time.*

*Roxy: Other times when you kind of, **hang around** waiting in case something happens and it doesn't, it's just very frustrating.*

5.11.3 Negative experiences

The students experienced a range of negative experiences which had different consequences to learning. These are summarised in Table 8.

Common characterisations of negative experiences were circumstances or occasions considered to be 'hard' or 'difficult.' This general sense of struggling was associated with disengagement or withdrawal from opportunities.

Dimension	Quotes	Impact
Struggle or challenge	<i>Harriet: And things like, that you want to leave early for...it might be just like if you're like not having a good day.</i>	Leaving early
	<i>Lee: if you've got a few things wrong before that, you, you just don't really want to take very many risks.</i>	Withdrawal
	<i>Charlotte: I was there to learn how to be an F1. So that was, difficult to start with... everyone always looks really busy.</i>	Hesitance

Active negative social interaction	<i>Jessica: sometimes the way doctors ask you questions can be quite, you know, demoralising.... He was like, 'well you should know this! Go on! What is it?'. And I was like, 'I don't, I don't know.' And that just makes you feel like, not very good?</i>	Negative emotional state
	<i>Nile: And I didn't manage to get it [the cannula]. And then, the anaesthetist wasn't as nice in her response.... she wasn't very pleased... it knocked my confidence a bit.</i>	Unsupported in failure leads to confidence drop
	<i>Harriet: I was like, 'oh, like, so-and-so, would you mind if I accompany you in theatre?'...but he said no!... And then he left! I was like, 'o-kay. Now all the consultants have come and gone, like, what do I do?'</i>	Student left in crisis
	<i>Jason: I was just trying to talk to the other people and they just like, just like kind of like bouncing me across different people... so then I kind of had that, erm, feeling of, 'well nobody wants me here'... You think, you know, like, 'what can I make an excuse? To like, go?</i>	Decision to leave the environment early
Passive negative social interaction	<i>Jessica: That really, like, doesn't help your motivation... You know, on days where you just feel like, everyone's sort of ignoring you.</i>	Student demotivated

	<i>Magnus: I kind of wanted to go home...they [doctors] kind of want to get on with their own work and [laughs] wanting to get rid of you.</i>	Student inclined to leave the environment
	<i>Jason: The consultant, he just like looked me in the eye, like, definitely heard me, I was talking at normal volume, and he just like, walked past me!... And I just thought, 'right, I'm going!'.</i>	Decision to leave the environment early
	<i>Maisie: They [staff] see you as a medical student and they kind of dismiss you... that blocks a lot of learning opportunities.</i>	Student restricted from engaging with opportunities
	<i>Tony: When it's busy, you start to feel sort of further and further out of that team... you're less able to function within it.</i>	Student restricted from engaging with opportunities
	<i>Harriet: certain doctors will introduce you when you go into rooms with patients. Whereas others just won't...they'll introduce themselves, and then go straight into talking... you're just standing there!</i>	Student frozen unable to engage

Table 8: Negative student experiences and their impact

Negative social interactions were a predominant source of challenge and were both active and passive. Active negative social experiences included being belittled, being questioned intensively, being rejected, being unsupported in failure or having their care delegated to someone else. Passive social experiences included being abandoned, being ignored, being unwanted, being dismissed, feeling isolated and not being introduced.

The overall impact of these negative social experiences was the inducement of negative emotional states and tendency towards disengagement. Indeed, medical student ‘mistreatment’ is an increasingly recognised phenomenon in the medical literature (Mavis et al., 2014, Lind et al., 2020, Kloos et al., 2023). In particular, the practice of intensively questioning medical students, referred to as ‘being grilled’ or being ‘pimped’ has come under scrutiny as an enduring and contentious problem (Scott et al., 2015, McCarthy, 2016, Monrouxe and Rees, 2011, Anonymous, 2011).

5.11.4 Positive experiences

Positive general conceptualisations of experiences were described by adjectives including ‘nice’, ‘great’, ‘interesting’, ‘good’, ‘positive’, ‘productive’ and ‘above average’. Positive evaluations of experience had a motivating effect on participants in terms of engagement with opportunity. This was manifest where they made decisions to remain in clinical environments or where they expressed increased enthusiasm for getting involved.

Roxy: I'd had a good morning as well, so, I thought it was definitely worth going back to the ward for the afternoon,

*Jason: If you're on a **particularly** good area, for an amount of time, then you do become keener.*

Positive social experiences significantly contributed to positive general evaluations. Experiences included feeling supported, feeling part of the team, being ‘looked after’ and having a friendly initial encounter with staff and patients. The following dimensions are summarised in the table below which includes the impact on the student in relation to engagement with opportunities.

Dimension	Quotes	Impact
Feeling supported	<i>Esme: She was asking me, what I'd like to get out of it....And I felt able to ask questions, and I felt listened to.</i>	Seeking involvement
	<i>Tony: Sometimes that's all you need is just that one person who's sort of, erm, helping you. Just like</i>	Motivated to engage

	<i>that little step that you need, that little push that you need to go and do something.</i>	
Feeling part of team	<i>Charlotte: So I think it can be more useful when it's actually busier, you can be more part of the team.</i>	Clinical experience valued
	<i>Tony: Give me like a legitimate role in the team and like get involved and then that's really nice. ' Or, 'yes, this actually really useful, and that's why I'll stay.'</i>	Motivated to stay in the clinical environment
Being looked after	<i>Harriet: The nurse felt sorry for me, found me a nice registrar...I ended up having a really good day.</i>	Perception of 'good time,' positive perception of clinical experience
	<i>Lincoln: He just took me under his wings going, 'I'll show you.'. And I think from there I've just seeking opportunities to practise that skill more.</i>	Increased drive to engage with experiences
Friendly reception	<i>Tony: I think for me, the big thing is just the influence of like a friendly face... you just feel part of the team way easier.</i>	Sense of inclusion and ease
	<i>Nile: [the patient] was happy to have me.... I was doing it and because I was writing it up afterwards...that was the most engaging.</i>	Increased engagement

Table 9: Positive student experiences and their impact

The importance of establishing positive social interactions on first encounters is described in more detail in Chapter 7.

5.11.5 Conclusion

The participants were involved in a range of experiences whilst on clinical placement and the conceptualisation and evaluation of these experiences related to their decision to engage with opportunities. The notion of 'gaining' or 'extracting' from experiences predominated, which linked to the student pattern of behaviour of cherry picking or being selective (see Chapter 6). Negative experiences could impact on student motivation and drive to engage with subsequent opportunities, and the students experienced a range of passive and negative interactions with staff members. Similarly, positive experiences and relations with staff drove student engagement with opportunities by encouraging their involvement, inducing positive affective states, and driving over-arching positive generalisations of experience.

5.12 Initiation points and decision-making

5.12.1 Introduction

This section brings together many elements touched upon in the previous sections which relate to the underlying processes behind engagement with opportunities. Although this thesis takes the perspective of 'decision-making' to involve both implicit and explicit choices, this section predominantly deals with the latter. This includes the process of 'planning' and making decisions for the future. It will also examine the participants' own explicit reflections on decision-making and what they perceive to be underlying influential forces. The nature of 'choices' that students make will also be described. Finally, the impetus or 'initiation points' for engagement with activity will be explored with respect to circumstances and social stimuli.

5.12.2 Planning

One feature of decision-making are those choices made in the present time for the future. Interestingly, the participants were very circumspect when it came to planning and showed limited capacity to set goals and future targets (see Section 5.7.2).

There was a sense of 'planning as they went along', and waiting for inspiration for what to do which was described by one participant as 'loitering'.

Charlotte: I think, your day could be a lot better if you went in with like a goal. If you don't know what that goal is, it's very like difficult to do so.

Max: So, the afternoon plan was very much made on the... as you were going along.

However, there were examples of advanced planning by some proactive participants, though these plans could be frustrated due to a lack of available opportunities or other contextual determinants.

Jason: It's like, 'okay, come with a mission of what, these are thing that I want to work on, these are things that I want to learn more about'. And then I come there, and it just doesn't, doesn't really happen?

Tony: I'd planned to see some patients. Like, I want to kind of see more patients on my own. Erm. But that wasn't really the right time for that. Because it was the consultant ward round, so everyone's getting seen by the consultant anyway.

One aspect of planning that predominated was the decision to delay engaging in activity, or planning to do something at a later date. This could be associated with a lack of impetus to become engaged with current learning opportunities.

Magnus: Writing a discharge summary's probably not something that's going to come up that much in Finals [exams]... I'm leaving it to my assistantship.

Max: [I] wasn't too, you know, worried or like actively searching for cannulas to do, because I knew that more would pop up in surgery.

5.12.3 Decision-making considerations

The participants reflected on aspects of their decision-making and how this was shaped and conceptualised. This ranged from consideration of the explicit opportunities to the role of priorities and the individual perspective.

In terms of the options available, the students explicitly described some opportunities. There was a range of opinion about the extent and variety of choices

available, with some considering the availability of options was limited in some way. The participants also felt at times that they lacked knowledge or clarity about the existing options.

Tony: 'I can go and do these bloods.' Or 'you can go and shadow that person'. But it doesn't feel like a formal option...It's just sort of like, what you decide to do. Erm, out of the choices that are there in front of you.

Lee: At the end of the meeting erm, one of the consultants sort of said 'oh, what are you doing today?'. And we said 'oh, we don't really know.

That some students were unaware of the options available could speak to the importance of implicit decision making as well as providing insight into the struggle to self-regulate learning.

The participants had greater clarity about their priorities shaping decision-making. Pursuing these priorities could lead to students declining opportunities and changing setting. Priorities also varied according to the time of day or year, particularly in relation to assessment.

Magnus: When I found out like that I could scrub in, it's like, 'prioritise that', 'cause it's... I can, like, revise fractures at home.

Jane: My priorities aren't being on the wards right now 'cause I can do that after this exam's out of the way.

The nature of students' priorities is described in more detail in the previous Sections 5.5 and 5.7.

Finally, student decision-making was influenced by a perception of there being targets or acceptable thresholds for the number or type of experiences, which resulted in participants being disinclined to engage beyond perceived boundaries.

Max: I'd done that in the previous rotations. I don't feel like I need to go to the physios any more than I have?

Lee: [about discharge letters] I've written I think seven or eight of those. Erm, which was about enough.

This rationale is perhaps best understood in the context of competency-based medicine, which has been criticised for encouraging ‘tick-box’ approaches to learning (Bindal et al., 2011, Ott et al., 2022, Hawkins et al., 2015).

5.12.4 Choices

Although implicit decision-making predominated in this study, there were occasions where the participants explicitly selected one path over another. These ‘choices’ are described in this section, including ‘positive’ selections associated with engagement with opportunities and ‘negative’ selections associated with disengagement. Choices relating to switching or selecting between two opportunities will also be described.

At times the students were actively seen to ‘opt in’ to an activity, which was particularly pertinent when an alternative path was considered. This active process of engagement could also be enduring over a long period of time, despite barriers such as when pursuing personal goals.

Lincoln: I could have left them with those jobs. But... I also saw those as learning opportunities.

Esme: So I definitely wanted to narrow down those skills a bit more. So that's why I asked to, to review patients.

Another active and explicit choice made by students was to ‘stay’ in a clinical environment. This could be an advanced decision, or one made in the moment contingent on certain conditions and contrasted with the student tendency to leave early (see Chapter 4).

*Harriet: I do have things in my like logbook and stuff that I want to try and get signed off. So, I would like **stay**.*

Roxy: I was pretty set on going to the ward, at least for the morning.

In contrast to the positive choices to engage with opportunities, the students also made explicit choices not to engage. This manifested as declining to engage, delaying engaging with an opportunity, holding back, or withdrawing from an opportunity, waiting to be invited or leaving the environment (see Table 10). For the latter this sometimes was characterised as ‘skiving’ where absence was deliberate and unauthorised.

Feature	Quotes
<i>Declining</i>	
	<i>Magnus: they would offer in the past like if you wanted to scrub in and because I didn't know, I'd always say like, 'no'.</i>
	<i>Roxy: when people have suggested oh like, 'well do you want to go to theatre, or shall I?' Or something. And I would say, 'you can go!' because I'm not that interested</i>
<i>Delaying</i>	
	<i>Max: 'I could do a discharge letter. But, erm, I'd rather not right now.</i>
	<i>Jane: 'well my priorities are that, my priorities aren't being on the wards right now 'cause I can do that after this exam's out of the way'</i>
<i>Withdrawing</i>	
	<i>Lee: If you just don't understand something whatsoever, I think you're actually less likely to ask.</i>
	<i>Jane: I probably could have asked to do... stuff...I was probably just a bit scared to?</i>
<i>Waiting for an invite</i>	
	<i>Lee: you almost don't want to say 'oh, can I scrub?'... I would always wait to be invited.</i>
	<i>Patrick: you just sort of gotta be patient and wait for them to arise. Or wait for someone to think, 'oh yeah, actually that would be a good thing for you to do.'</i>
<i>Leaving</i>	
	<i>Roxy: He doesn't want me here. I'll just say "right, I'm going!"</i>
	<i>Lee: I've thought, 'well, I've got an exam coming up. I could go home and use my time pretty effectively here'.</i>
<i>Skiving</i>	
	<i>Jason: We all skived and went to Alton Towers. And it was probably the best day of third year actually!</i>
	<i>Esme: There's people even who would say, 'well, erm, I'm on medicine, I know it's a ward round, so I'm just not going!</i>

Table 10: Characterising explicit choices not to engage

Many of these 'negative' choices relate to established patterns of behaviour which are described in the subsequent chapter.

Finally, the students also described a selection process between what they thought different options were. A pervasive option on the participants' agenda was leaving the environment to engage in private study either at home or in the library. The students also described 'adaptive' choices to remove themselves from undesirable circumstances which included switching environments, or choosing to return later.

Roxy: So either try to go to the different ward if you can, if that's allowed, again if there's not too many other students there. Or, hit the library for a bit and come back and see if it's changed in an hour or two,

Nick: So take yourself away and then come back after it's over and be like, 'oh, like,'. Then like, re-engage with the process.

To conclude, the students described a range of explicit choices that they made in relation to engagement with opportunities. This included positive choices to engage, negative choices to disengage and the conscious decision to switch between opportunities, particularly away from unfavourable circumstances. These explicit decision-making processes provide key insight into the study phenomenon alongside implicit choices outlined in other sections.

5.12.5 Initiation points

Finally, this section will consider how student engagement with opportunities is first initiated. In some instances, this seemed to be a product of the circumstances, for example how the student was behaving, or the nature of conditions on the ward. Otherwise, activity could be initiated through social interactions or through personal drive.

Considering student engagement as a product of circumstance, there were four clear situations acting as a springboard for activity. The first of these was being in the 'right place at the right time'. This was coupled with a notion that students need to be 'opportunistic' as well as recognising the inter-dependence on contextual circumstances.

*Harriet: Yeah, I guess it's just about like **seeing** opportunities and jumping on them!*

Tony: I guess just the opportunities when they come up... I wanted to do lots of cannulas because I didn't get much chance

Secondly, student engagement could arise out of a vacuum of activity, where the lack of activity or perceived interest in the student served as a prompt.

Patrick: Because there wasn't really much going on... it's kind of a thing to do that we've developed from this quite common situation where nothing's happening and also no one's got time for you.

Max: There didn't seem to be much going on. And I didn't really, like, have a plan...so at that point I kind of just got my logbook out and just went through [it].

Thirdly, the 'ward round' was an integral part of the student day and frequently served as an impetus for different student activity for example through introducing students to patients or highlighting tasks that needed completing.

Magnus: the consultant asked me to write a discharge summary... I think it was just kind of to speed up her ward round

Max: the ward round's where you work out the kind of opportunities that you have on that ward [pauses] for the whole day.

Finally, conversation or general social interaction would also often generate activities for the students to engage with. At times the students deliberately pursued social interaction for this purpose (see Section 6.5).

Magnus: I think I probably make more of an effort with the doctors now, 'cause I feel like that, if you're like friendly with them and like, if they kind of like you, you kind of get more to do.

Lee: if you're not involved in a sort of group conversation, you're less likely to have someone say, 'oh do you want to do this?'.

The students explicitly recognised peer-influences determining initiation with activity and described several patterns of influence. This included where the student

followed a peer, where activity was jointly decided upon or where a participant responded to a peer's suggestion.

*Jane: We'll do the ward round and then see if there's anything to do and if they say 'no' then we're like, 'right! Well **we'll** find something to do!*

Lee: It's like, 'oh, you're going to that one, I'll go to that one too'.

Roxy: It does depend on who you're with in terms of what they want to do.

The role of staff mediation in student activity is well described. Initiation could be characterised by a direct approach (such as a request, advice, or instruction) or indirect in the form of an invitation.

*Charlotte: They ask you to do things that will be useful for **you**.*

Harriet: They're just like, 'take these notes, go and see the patient'.

Lee: He said 'oh, I've got this on, you should come to it tomorrow'

Jessica: Everyone kept saying, 'oh you should go and examine her, go and examine her'

The role of staff mediating student activity is described in more detail in Section 5.9.

Finally, the students were also 'self-led' to a varying extent in initiating activities. This ranged from spontaneous opportunistic requests, to long-held routines to complex pre-meditated plans which were carefully orchestrated.

Patrick: I went to clinics like breast clinic, colorectal clinic, erm, I saw some endoscopies. That kind of thing. You organise them yourself.

Tim: I've learnt over the years to always ask the surgeon, 'Is it okay if I scrub in? Can I scrub in?'. The first thing I ask is, 'can I scrub in?'

This manifestation of goal orientated behaviour, and independence, are discussed in more detail in Sections 5.7 and 5.9.

5.12.6 Conclusion

This section provided an insight into the explicit aspects of decision-making as demonstrated or described by participants. Planning was limited, and the decision to delay or defer activities was common. Students' meta-cognitions on decision-making

included describing their options and how these related to their own priorities and contextual circumstances. Manifest in students' accounts were explicit 'choices' which included the decision to positively engage in opportunities, to disengage with opportunities or select one opportunity over another. The triggers for engagement were also examined from the perspective of 'initiation points' that either arose predominantly from the circumstances, social influences, or the participant themselves.

5.13 Conclusion

The purpose of this chapter was to explore students' experiences, focusing on the inter-related processes underlying student engagement with learning opportunities. Central to the phenomenon was the students themselves and the elements which shape their sense of 'being.' This began with their 'qualities, traits and values,' some of which were common to the student body and others which were individual. Understanding the students' development as professionals across stages of the curriculum transitions yielded insight into how individual growth impacts upon decision-making over time. Related to this were students' enduring beliefs, judgements, and opinions. This included general value judgements about how interesting or useful opportunities were as well as specific judgements about the value of opportunities according to foci of prominence such as 'assessment.' Other aspects which were closely tied to decision-making around engagement included the students' emotional, affective, and physical states and their motivational influences. Generally, positive affective states powerfully stimulated engagement in learning, whereas negative emotional and physical states were inhibitory. Considering student motivations, these were both individual and socially determined. Intrinsic motivation was derived from personal enjoyment, whereas the avoidance of challenge and discomfort were extrinsic motivators. The students also expressed specific goals including passing exams, achieving personal comfort and the aspiration to function effectively in their future role as doctors.

Going beyond the student, the nature of their relationships with others in the clinical environment was of paramount importance in determining the students' sense of self and the process of navigating opportunities. Relationships with staff, peers and the community of practice were complex, nuanced and variably influential. The

relationship with patients was less well defined, despite them being at the heart of clinical activity and, consequentially, learning opportunities.

Deriving in part from relational as well as individual factors was the nature of the student role within environments. Integral to decision-making was the extent to which the student exerted autonomy, independence and agency in their interactions. The student agenda was in many ways socially determined, and the need for mediation and learning support was clearly apparent.

Furthermore, the nature of student interaction with opportunities was also shaped by the 'architecture' of their experiences. This included contextual features as well as norms and structures relating to workplace functioning. 'Navigation norms' included commonality in the interactions with staff and peers and how learning opportunities are conceptualised and prioritised. Both internal and external contextual factors were significant enough to warrant further investigation and are described in Chapter 7.

Finally, the students' self-defined reality of learning opportunities and conceptualisation of experiences shaped how students subsequently engaged in them. Pertinent vantage points from the student perspective included a tendency towards evaluating experiences on a spectrum of positive to negative, and the predominant perspective of 'extracting' from experiences, as in considering what was gained. Reviewing the explicit aspects of decision-making, the students were reflective about the deliberate processes they engaged in such as planning and prioritising. Triggering engagement with learning opportunities were 'initiation points' where activities were 'self-led,' influenced by staff or peers or were predominantly a product of specific circumstances.

5.14 Link to next Chapter

The following chapter explores how decision-making influences translate to student patterns of behaviour during clinical placements, and how that ultimately impacts upon their learning in clinical environments.

6. Chapter 6 - Phase B Part 3 Interviews and Pre-interview Questionnaire: Patterns of behaviour and the relation to learning

6.1 Introduction

This chapter presents the findings from Phase B of the study involving eighteen final year medical students who took part in semi-structured interviews preceded by a pre-interview questionnaire. Where Chapter 5 focused on research objective two, this chapter focuses on presenting the interview findings based on research objective three:

- Objective Three: To assimilate medical students' accounts of the activities they undertake during clinical placements in order to discern any patterns of behaviour and how these relate to learning during clinical placements.

The sample, recruitment and data collection and analysis processes for this phase of the study were presented in Chapter 4. Patterns relating to the general approach to clinical placements will be examined as well as how these relate to the specific typical activities as described in Chapter 4. The role of patterns of behaviour in managing workplace relationships will also be described. Finally, the implications for learning in the clinical environment will be explored, with reference to the relevant literature. These findings are cross-referenced in Chapter 9 in the over-arching conceptual model.

6.2 Overview

A map of the themes which will be covered is included in the Figure 23 below. Discussion will take place concurrently with presentation of the findings.

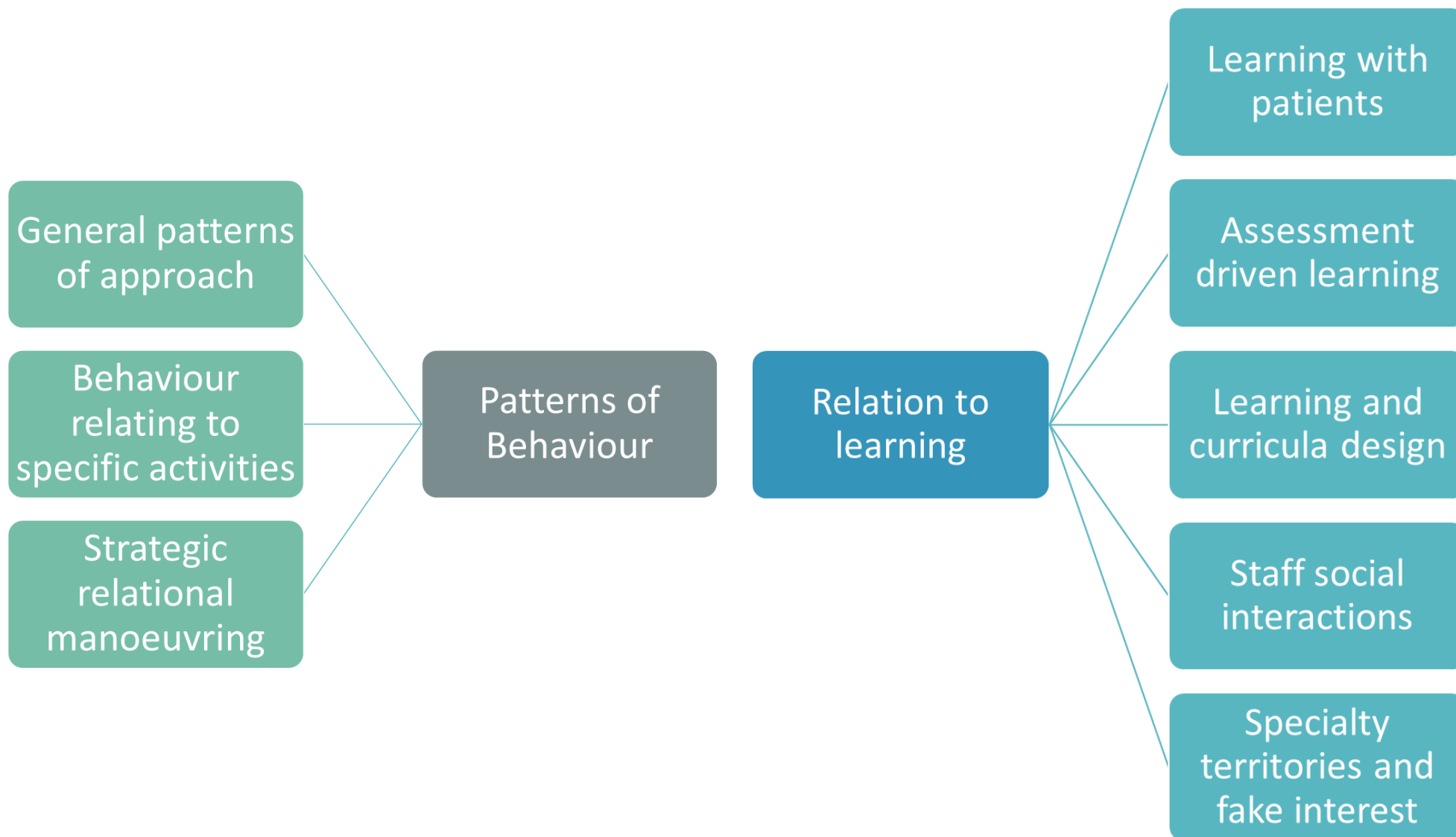


Figure 23: Map of themes addressed in Phase B Part 3

6.3 General patterns of approach

Assimilating medical students' accounts of their experiences has facilitated the construction of students' approach towards engaging with activity in general terms. Patterns of behaviour are evident in terms of the initial approach to activity, how students behave generally when engaging with an activity, and the intended outcomes of engagement with activity. These are demonstrated in Figure 24 and will be considered in turn.

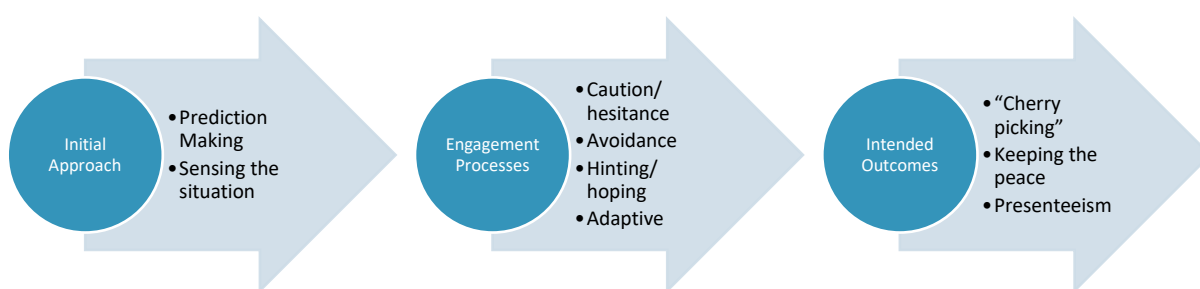


Figure 24: Representation of medical students' observable patterns of behaviour in relation to the process of engaging with activity generally.

Figure 24 Legend: The dark blue circles represent time periods of engaging with opportunities. From left to right firstly the initial approach is described, then patterns of behaviour during engagement, then finally what the students intended to be the outcome from engaging.

6.3.1 Initial approach

Firstly, considering how activity is approached, participants describe a process of trying to make predictions about upcoming experiences, particularly in relation to their own agenda. This occurs prior to and in the early stages of entering the clinical environment and can inform decision-making, especially around leaving placement early. The significance of these time periods is described in further detail in the cross cohort analysis presented in Chapter 9.

Jason: If you had a bad experience on Monday and Wednesday's the same, by about ten you're like, 'right! Well! [laughs], you're trying to think of excuses of, erm, like think about going basically. Erm. And so yeah, I think that feeds into it. That, that it's a self-fulfilling prophecy, isn't it?

Predictions can be informed by a process of information gathering, for example consultation with peers, which in turn inform individual decisions about attendance. However, though students describe a tendency of trying to make predictions, they also recognised that this can be challenging or impossible to achieve.

Harriet: It can be frustrating because you never really know when that useful period's going to come.

Jason: Because, erm, word gets round about certain wards, certain doctors, erm, you know, in both like a negative, and like a positive way?... Like, we'd, like we'd talk about, you know, 'did you have a good time on this ward?', [changes voice], 'no', like, 'why? Like what?', erm, you know, 'is it worth turning up?' basically.

Indeed, 'anticipating the outcomes' is a recognised dimension of planning in self-regulated learning for students on clinical placement (Berkhout et al., 2015), whereas Vanstone et al describe the process of students' initially appraising their environment with respect to social hierarchies (Vanstone and Grierson, 2019).

In other situations, the participants appeared confident in their ability to predict the value of experiences early in the process of encountering them. This is characterised by another pattern of approaching activity, 'sensing the situation,' whereby participants make sense of a context and formulate impressions through early experiences. The process of 'sensing the situation' can be used to inform behaviour relating to the decision to remain in the clinical environment.

Max: It's mainly the feeling you get from when you walk in and you speak to the doctors or the people, whoever it is there. You kind of just get, you can, you really, you can really kind of get a, the gist of how the ward is that day.

Roxy: See what the ward's like and introduce myself to the staff and stuff and see, kind of, what they did each day and how useful it was...if it was really slow or the staff weren't particularly, seemed happy to have students around or whatever, I'd probably just you know, maybe gone to the library or tried a different ward.

This process echoes the tendency for students to try and 'read' or 'size up' staff members to determine their approachability and the student engagement strategy as

described in the literature (Lyon, 2003, Vanstone and Grierson, 2019, Liu and Sullivan, 2021). McClintock also describes a parallel process of 'diagnosing the learning environment' with respect to the parameters of psychological safety (McClintock et al., 2022) .

6.3.2 Engagement processes

There were four prominent patterns of behaviour evident when considering students' approach to activity in general. Firstly, participants appeared to be cautious or hesitant in their approach to engagement with activity, for example in seeking input from staff members or getting involved in tasks.

Lee: You're just more wary about asking questions. Sort of, just you need to pick the right moments.

Tony: If it's really busy then you don't feel comfortable being like, 'can you come and watch me do this?'

Lincoln: When they're busy. Erm, in terms of my role I probably, like, I probably take more of a step back.

Secondly, participants also displayed a tendency to be circumspect in achieving their objectives, often failing to take direct action to achieve these.

Lee: You almost don't want to say 'oh, can I scrub?... I would always wait to be invited.

Patrick: When a medical student stands around on a ward and kind of expects a member of staff to notice them...So that then, the erm, the, the member of staff then feels obliged to erm provide at least something for them to do.

The phrase 'hinting and hoping' encapsulates this well, as first coined by Hagg-Martinell in their ethnography of student behaviour in an internal medicine ward (Hagg-Martinell et al., 2017).

The next two behavioural patterns, 'avoidance' and 'adaptation' relate to an approach to managing activities or experiences which are less desirable or potentially unpleasant. Avoidance was often described in relation to activities which were predicted to be challenging or which provoked fear.

Esme: I know for myself that if I'm nervous about something, a skill say, like this was reviewing patients, and I, I had like seen behaviour in myself previously that I was avoiding doing that.

Nile: 'I don't really know what theatre I'm going to. I don't really know who I'm looking for in theatre. I could turn up and, and have a look what's going on. Or I could just go to the library.

Indeed, avoidant behaviour was widely exhibited in studies of medical student learning on placement (Barrett et al., 2017, Chou et al., 2014, McClintock et al., 2022, Woods et al., 2011), for example retreating from clinical areas if patients were not immediately favourable to interact with students (Barrett et al., 2017) or avoiding engagement in cases of staff mistreatment (McClintock et al., 2022).

In other instances, students practised 'adaptation' where they opted to create more palatable opportunities in contexts where the perceived options were undesirable. This more constructive pattern of behaviour is related to the trait of resilience described in Chapter 5. Examples of this included pursuing self-directed learning, problem solving and reverting to undertaking mock examinations with patients in preparation for clinical examinations.

Tim: I'm completely outside the circle and there's no screens and no cameras and, I'm just searching high and low, looking for a way to see what's going on.

Max: Just googling just stuff I didn't really understand because there was no-one to ask.

Patrick: Doing timed MOSLERs [patient based exam practice]...So, we're just trying to take advantage of the clinical time by just basically teaching each-other... if you've got something for me to do, let me do it, otherwise I'll organise my own thing and slash go home.

6.3.3 *Intended outcomes*

Considering students patterns of behaviour, a final consideration is the student's intention towards engaging with opportunities. The first of these is 'Cherry picking' which incorporates the behavioural objective of students in selectively engaging with

activities according to their own agenda. This relates to both 'avoidance/adaptation' and 'prediction-making/sensing the situation' as previously described.

Jason: It genuinely feels like a lot of paperwork in the afternoon. Which, I'm not going to learn from and I don't want to do.

Harriet: if it's not worthwhile you being there, then you shouldn't be there?!

Roxy: 'I'm not going to stay with this if it's not useful'

*Tony: Because, I, I've kind of got my own different agenda, like that's their **job** and I've got my stuff to do...doing lots of discharge letters, or doing lots of admin, it's a kind of less **useful** use of my time.*

Indeed, the selective nature of student participation is recognised in the literature (Liljedahl et al., 2017, Bennett et al., 2015) and is borne out in differential placement experiences (Dolmans et al., 2001, Woods et al., 2011).

Interestingly, the participants weren't always selective in what they chose to engage with and could be decidedly unselective. The contrasting concept of 'presenteeism' emphasises engaging with an activity simply for the sake of being present or through habit, rather than through considered decision.

Jessica: Today I feel like I've spent most of my time sat around waiting for something to happen?... I've just ticked the box of "I have attended placement".

Maisie: [I] was just going in because I had to go in and, I'd like sit about in the wards.

Finally, another prominent intended outcome of engagement with activity for students is a desire to 'keep the peace' and not disrupt workflow or displease other staff members. At times this meant participants acting in opposition to their intentions or desires, even when these were expressed.

Magnus: He did seem very keen on me going to theatre instead of going to the fracture clinic... I just felt like, they always seem quite busy as well, you don't want to put a problem in the works, so I just went along with it.

Maisie: I was kind of asking like, 'what would be the best patient for me to see so I'm not wasting anyone's time?' ...I didn't want to seem too much of a, I don't know, nuisance? I guess?

This pattern of engagement is best understood in the context of the specific relational dynamics between staff and student particularly where students seek to impress senior medical staff (Berkhout et al., 2017c, Liu and Sullivan, 2021, McClintock et al., 2022, Woods et al., 2011) and they in turn can exert direction and control (see also Section 5.8.3)

6.3.4 Conclusion

In conclusion, particular patterns of behaviour were demonstrated by students in relation to their approach to activity in general. This began with the initial approach to opportunities where students tried to establish in advance of engagement or early on in their attendance what the experience might involve. These patterns of behaviour are described as 'prediction making' and 'sensing the situation' respectively. During the process of engagement, students demonstrated a reticence to engage actively and directly with activities, characterised by 'hinting and hoping', 'caution/hesitance' and 'avoidance'. However, they also exhibited evidence of creative manoeuvring during perceived undesirable circumstances through the process of 'adaptation'. Finally, there were some shared intended outcomes of engaging with activities, ranging from being highly selective to being entirely unselective in the choice of activity, all the while remaining cognisant of minimising disruption. These patterns of behaviour are described as 'cherry-picking', 'presenteeism' and 'keeping the peace'. The following section will relate these general patterns of approach to activity to some of the specific activities characterising the student day in Section 4.4.2.

6.4 Patterns of approach: relating patterns of general approach to patterns of engagement with specific activities.

6.4.1 Introduction

Having established the common activities students engage with, this section addresses the specific patterns of behaviour governing students' engagement with these opportunities. This will also be related back to the generalised trends of

engagement described in the previous section. Figure 25 provides a summary of these associations which will be considered in turn.

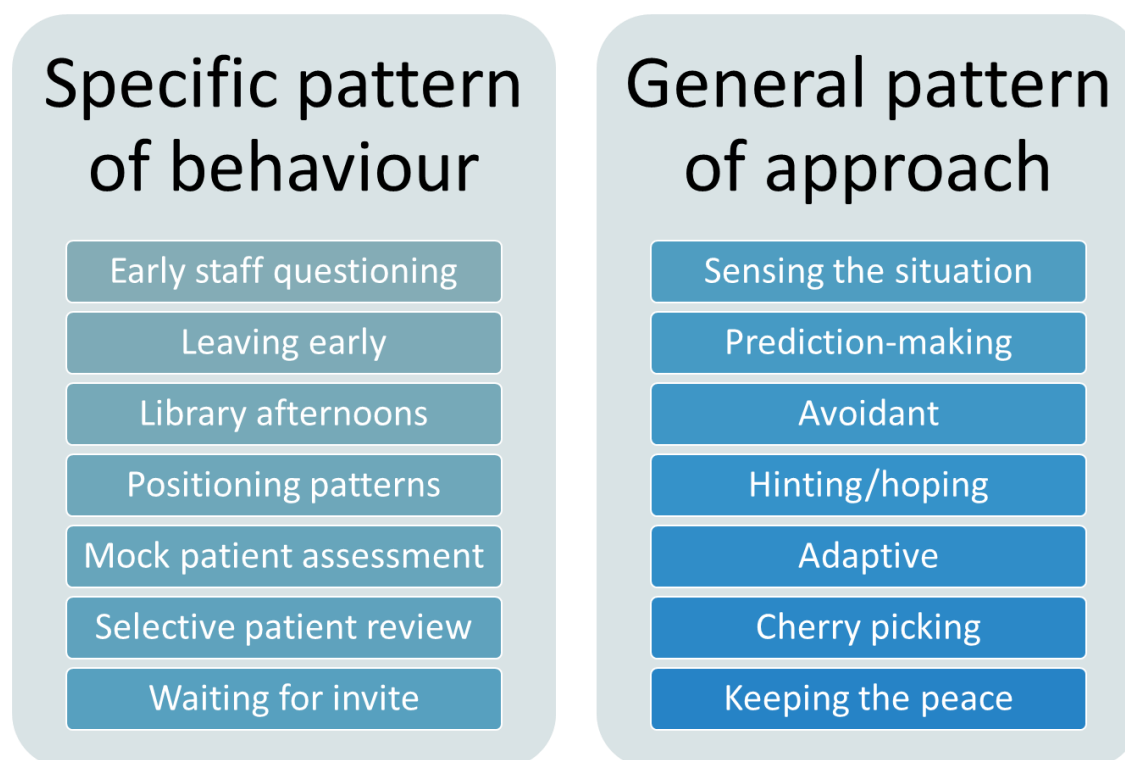


Figure 25: Specific patterns of behaviour and the relationship to general patterns of approach.

Figure 25 Legend: On the left side, specific patterns of behaviour are described. On the right hand side general overarching patterns of behaviour are described. The horizontal placement of the concepts links the specific to the general.

6.4.2 Patterns of behaviour relating to specific activities

Asking questions of staff members is prominent enough to be considered a discrete activity. An established pattern for students was to make immediate enquiries on arrival to a clinical placement to determine the workload or activity status within the environment. This was typically done to determine their subsequent behaviour and relates to the general pattern of behaviour of 'sensing the situation'.

Jane: I'd just turn up and be like 'is there anything to do?'

Jason: Usually, I go to the junior doctors and like, 'are there any jobs that need being done?'

Another pattern of behaviour was leaving the clinical placement environment before the timetabled finish time. As previously described the participants in this cohort left the clinical environment on average 51 minutes prior to the official finish time. This phenomenon can be related to the general trend of making negative predictions about an experience.

Magnus: A lot of the time I probably leave at lunchtime anyway. Because there's nothing to do

Tim: If don't get to scrub in, I usually don't enjoy myself. I try to leave as quick as possible!

Max: I'll leave after lunch if I just really don't think [pauses] at this point it's just about prioritising your time, and sometimes the ward isn't the place to be.

Furthermore, as explored in the mDRM, students also habitually spent time away from the clinical environment, notably to undertake private study in the library. This behaviour was particularly adopted in the afternoons on clinical placements and can be considered an 'avoidant' behaviour.

Jason: I'm happy to go to the library in the afternoon.

*Carl: I **can't** be standing around doing nothing. I need to be **productive**. And if that's the case then I'm going to go the library and get my head in the books*

The retreat to non-clinical areas within clinical environments and in particular the library is a phenomenon already established in the literature, though with limited exploration as to the underlying reasons behind this (Barrett et al., 2017, Thyness et al., 2022, Berkhout et al., 2015).

In relation to the trend of 'hinting and hoping', this could manifest in the students' physical positioning. One pattern is 'loitering' near gatherings of medical staff to attract attention with the hope of being invited into opportunities.

Patrick: Essentially when a medical student stands around on a ward and kind of expects a member of staff to notice them.

Jessica: Me and the medical student, loitering round the doctors' station...Because we'd ran out of what we were going to do.

Indeed, waiting for an invite was another pattern of behaviour which the participants appeared to adopt to avoid disruption and 'keep the peace.'

Lee: [about scrubbing in] You don't want to impose yourself. Erm, so I would always wait to be invited.

Patrick: You just sort of gotta be patient and wait for them to arise. Or wait for someone to think, 'oh yeah, actually that would be a good thing for you to do.'

Magnus: I've never asked if I can scrub in for an, like, for a procedure... if I hadn't already been offered.

The importance of staff invitation to activity is emphasised in Hagg-Martinell's ethnography on medical student learning on clinical placement (Hagg-Martinell et al., 2017).

Finally, two of the specific patterns of behaviour relate to how students engage with patients. One previously mentioned adaptive behaviour was the tendency for students to review patients in a structured format mimicking the exam. Remarkably, this pattern of behaviour was so ingrained that students persisted in reviewing patients in this manner even after their clinical examinations were cancelled. Otherwise, a notable recurring behaviour of students was to be highly selective in which patients they chose to engage with. This example of 'cherry picking' is deep rooted to the extent that asking staff which patients were 'interesting' or 'good' to see is a relational norm (see Section 6.5.2).

Patrick: Usually the, the doctors will always be thinking, 'so who's a good patient to see'. Not sort of, 'see this random patient'. So, they will be, I mean, if I, if I ask if there's a good patient to see, I always get a positive response, the, they'll all turn around and look at the board or, think about who they've seen recently and who would be a nice and interesting person to talk to. Who would be able to give a coherent history, who may have interesting signs.

*Esme: You know, bouncing between patients, you know, seeing the ones
that have particularly good signs or a good story*

A focus on 'interesting,' chatty or coherent patients is also a finding borne out in other medical student studies (Zaidi et al., 2012, Barrett et al., 2017, Reid et al., 2014). Indeed, decision-making related to choice of patient to review is a rich and complex phenomenon which is explored in detail throughout this thesis.

6.4.3 Conclusion

In conclusion there are several patterns of behaviour adopted by medical students which relate to the general trends in how they relate to specific opportunities. These patterns of behaviour are wide-ranging and include students' management of their attendance, their interaction with the workplace environment, their engagement with patients and their relationships. The latter will be considered in more detail in the subsequent section as a particularly significant group of associated behaviours.

6.5 Patterns of behaviour and relational norms: strategic relational manoeuvring

6.5.1 Introduction

The relationship between students and staff members is complex and significant to the study phenomenon. Unsurprisingly, there are several patterns of behaviour students appear to engage in to manage and modulate their relationships, seemingly to meet their own needs and objectives. These will be addressed in the following section and are illustrated in the summary Figure 26.

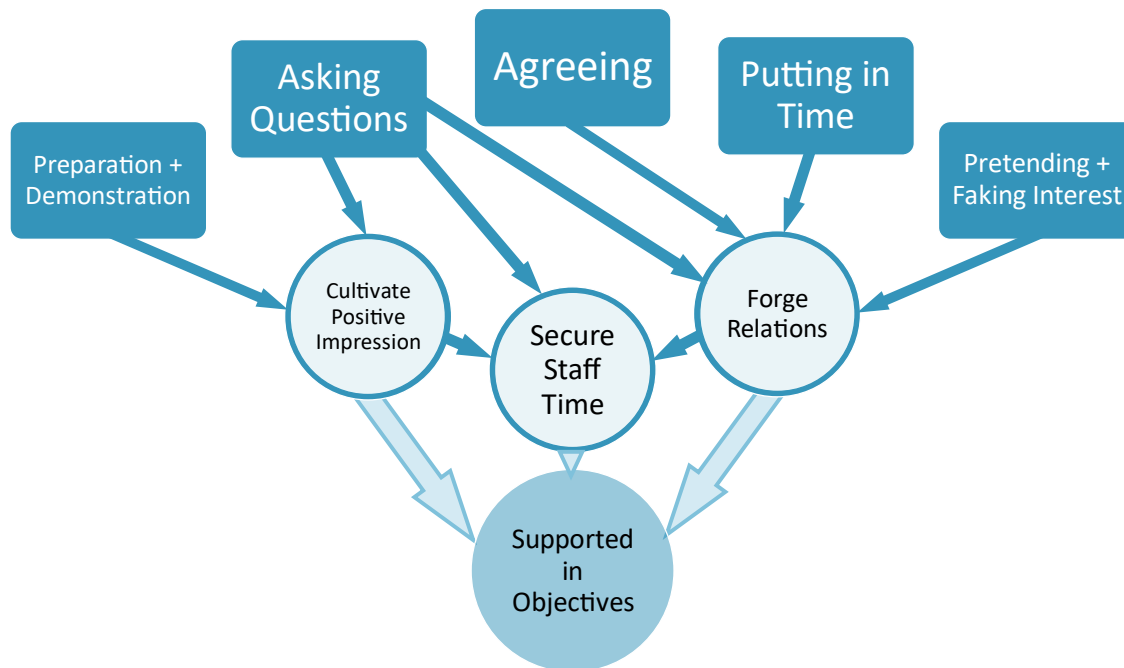


Figure 26: Patterns of behaviour in relation to managing relationships and purposes

Figure 26 Legend: The dark blue boxes represent student patterns of behaviour in relation to managing staff relationships. These are linked to over-arching aims of behaving in this manner, as represented by the light blue circles. The overall purpose in the mid-blue circle is for students to be supported in their objectives.

6.5.2 Patterns of behaviour and relationship management

There were three key outcomes identified by students when engaging in deliberate patterns of behaviour to facilitate meeting their goals. These were:

- Cultivating a positive impression of themselves from the vantage point of staff members
- Securing staff time and attention for their own purposes
- Forging and maintaining a positive relationship with staff members

The participants described several mechanisms through which these goals were achieved. Firstly, students employed the use of asking different types of questions as an important device in managing staff relationships. For example, the use of questions relating to clinical care were used to secure staff time and attention immediately or in the near future. This appeared to be a legitimate norm through which students felt empowered to interrupt workflow.

*Lee: If you want to sort of learn or receive teaching, you need to **ask questions**. Because people don't really volunteer that, they're quite just focused on what they're doing.*

*Lincoln: I thought I might be able to get some **teaching** from the consultant. ' He just wanted to get through the ward round. So like, I had to **ask** him things.*

Furthermore, questions could also be used to demonstrate the students' own knowledge or to demonstrate interest in the workplace activity. These were useful in cultivating a positive impression of the student and forging relationships with staff. One interesting practice was students asking a question they already knew the answer to, or introducing a topic they thought themselves to be knowledgeable in. Indeed, getting the 'correct' answer to questions was identified by students as important in demonstrating ability or proficiency. To optimise this, students also undertook specific preparation in advance of predicted encounters with staff members.

Max: I always in the first few patients try to ask the consultant some questions about something, just anything, even if I know the answer. Just to show that I, like, I'm paying attention...after that they might then start, you know, just specifically trying to get you a bit involved.

Lee: People like, they just ask a question to really tell you that they know something.

Magnus: Having done a little bit of pre-reading beforehand like, it makes the [laughs] makes the surgeon a bit more enthusiastic to like teach you. So like, if you know some of the like basic anatomy and like some basic procedures, then they think, they think you're more interested in the subject even, even if you're not!

Indeed, research in the clinical environment identifies that 'image management' is a key motivational driver for students' feedback-seeking behaviour, particularly where students perceive that an encounter will be positively received (Bok et al., 2013).

The students also tried to develop and maintain their relationships by pretending to have or faking an interest in the activity taking place, or in the staff member's

preferred specialism. Indeed, the students describe engaging in this practice as they believed it increased staff willingness to help them.

Jane: If you tell a consultant that you're interested in their speciality, then they're normally like, 'oh!' and they're really way more helpful.

*Magnus: I **really don't** like orthopaedics, but I, I was like, 'oh yeah! I find it really interesting'...I never say that a subject bores me because I think that would be quite demotivating for them. And I think I'd probably get less, less like teaching.*

Lee: Now that same consultant does know I'm quite interested in, in surgery. Erm. He said 'oh, I've got this on, you should come to it tomorrow'

Additionally, the participants also deliberately took steps to forge relationships with staff members with the hopes of reaping rewards or for reciprocal gain. Causing harm to the relationship was also considered a deterrent for going against staff members' requests or plans, which relates to the trend of 'keeping the peace.'

Tim: I found out who the trauma surgeons were for the week, and tried to follow them on the round, show my interest in what they were doing. Get the round done, so they know me a bit better. And then I tried to go into theatre on those days. Expecting to see them again...So, it's quite orchestrated.

Magnus: I probably make more of an effort with the doctors now, 'cause I feel like that, if you're like friendly with them and like, if they kind of like you, you kind of get more to do.

*Jason: Should I act in a different way so that people are more happy to teach me?'... so then I give it a **chance** and try to spend time trying, develop a rapport.*

The motivational driver 'to get teaching' is described in more detail in Section 5.7.8,

6.5.3 Conclusion

The students described several patterns of behaviour which were explicitly associated with the management, maintenance, or moderation of staff behaviour towards them. Strategic questioning was used to secure staff time, attention or

approval. Relationships were initiated or supported through real or fabricated demonstrations of interest. Developing a positive rapport with staff was used for reciprocal reward.

6.6 Patterns of behaviour and the relation to learning

The previous sections have described in detail students' patterns of behaviour in relation to specific activities, their relationships and towards opportunities in general. This final section relates these patterns of behaviour to students' overall learning during clinical placements, addressing the second part of research objective three.

- Objective Three: To assimilate medical students' accounts of the activities they undertake during clinical placements in order to discern any patterns of behaviour and **how these relate to learning during clinical placements.**

Following on from the pertinent dimensions of workplace learning as described in Chapter 2, the following discussion addresses patient contact; self-directed or self-regulated learning; assessment; role-modelling and supervision; learning and curriculum design.

6.6.1 Learning with patients

Interaction with patients serves as a foundation for medical student learning, and in many cases lies at the heart of curriculum design and development (General Medical Council, 2009, Spencer et al., 2000, Howe, 2007, Dodsworth et al., 2022). This study suggests that students are both highly selective regarding patients they choose to engage with and that there is a reliance on assessment-driven structures in characterising interactions.

Regarding the former, the negative impact of not encountering a breadth of different patients and presentations is recognised in the literature (Spencer et al., 2000, Bleakley and Bligh, 2008, Crotty, 2005, Annear et al., 2016). Specific challenges alluded to in this study were a bias towards coherent, amiable patients with specific pathology and a reluctance to review 'normal' or problematic patients.

Patrick: Usually the, the doctors will always be thinking, 'so who's a good patient to see'. Not sort of, 'see this random patient'.

Potential pitfalls in this selective approach with respect to learning and professional practice include future challenges in managing an unselected patient intake and deviance away from holistic patient care practices (Aquilina et al., 2018, Haidet, 2015, McLachlan et al., 2012, Bleakley and Bligh, 2008, Monrouxe et al., 2018).

Furthermore, a reliance on using assessment formats to structure patient encounters has the potential to compromise learning opportunities. Inherent to our setting, summative assessments involving patients are undertaken under strict and limited time frames, often only addressing singular medical problems or specific pathology. Following this format, participants' learning appeared skewed towards identifying pathology and strict time management.

Max: I'd try to approach it as if I was going into the room for the first time, after reading a little vignette. I didn't do it fully timed. But I tried to not blabber about random things.

Jessica: I suppose that was my main goal for the morning was, to get a bit more confident with MOSLERs [summative patient assessment] and especially how to like, keep the conversation on track and what you want to be talking about and the timing.

*Maisie: You're thinking like **mark scheme** wise what boxes am I ticking.*

Indeed, there is increasing recognition of the drawbacks of these assessment formats which have evolved in recent years from a need to ensure reliability and reproducibility of results (Harden, 2016, P. Collins, 2009, Hodges, 2003, Gormley et al., 2016, Rudland et al., 2008, Gleeson, 2009). A particular challenge is the disparity between patients or individuals specially selected (and often coached) for exams and those encountered in clinical practice (P. Collins, 2009, Kearney et al., 2022, Rudland et al., 2008). In our setting, this appeared to lead to an intolerance or disinterest in patients who could not give an account of their illness readily compared to the patients encountered in exams, or those with normal findings.

Roxy: Sometimes it's hard to, like, do it as an official exam, 'cause patients can just talk a lot. [laughs] Erm, I know again that's a thing you can get in the exam but it's... erm. I like to think that sometimes if someone's like very confused or very erm, like, slow speaking or whatever erm they

probably, well hopefully wouldn't pick that for like a very time pressured exam

Lee: I can do plenty of normal exams. So that's not, like positive findings is the ones that you really want to see.

This resonates with the research conducted with students by Rudland et al where real patients were not thought to be useful in preparing for standardised clinical assessments (Rudland et al., 2008). Arguably an assessment-styled patient encounter is also at odds with expectations for working doctors in managing multi-morbidity and other complexities in a patient-centred manner (General Medical Council, 2009, Gormley et al., 2016, General Medical Council, 2020). To conclude, the practice of how students typically relate to patients is potentially compromising the wealth and breadth of learning offered by these encounters.

6.6.2 Assessment driven learning

Assessment is a dominant driver of learning which was associated with 'avoidant' and 'cherry picking' behaviour in our participant cohort. That summative assessments have a strong behavioural influence on students is a known phenomenon (Scott, 2019). Our participants describe patterns of behaviour which serve to reinforce the influence assessments have through their relations with staff members. The previous section describes the impact of assessment on patterns of relating to patients, which interestingly persisted even when summative assessments were cancelled. Furthermore, the students became so focused on assessments, for example what is contained in the logbook, that they could disregard learning opportunities that were not in the assessed curriculum even if they could see the value of these to their future role. A common example was that of administration which forms a significant part of the junior doctor role in the UK (Vance et al., 2019, Bluemel, 2022). However, this was not a universal outlook, and other participants explicitly described wanting to engage in opportunities not specified in the 'logbook,' even expressing that the logbook was too limited.

*Nile: [about discharge letters] With it not being a competency in the logbook? Er, it's, it's **easier** to go with the logbook and say, 'oh, can I get one of these **done**?'. And I guess, I don't know, with it not being in the logbook, it's not something that I'm always looking for.*

Esme: So, I completed my logbook!... But, erm, I felt in, sort of, trying to pursue that, I'd neglected the, the just basic like assessment of a patient.

Nick: In fact, there are a few things like, erm, the competency logbook I feel like is missing some things that I want, that I want to kind of add in for myself. So like, erm, I wrote, I wrote a discharge letter and a TTO [discharge medication order] the other day. I feel that was really helpful.

Furthermore, an important impact of assessment driven behaviour is that it shaped how students related to other staff members which in turn impacted on how staff members mediated their experiences. Indeed, the logbook appeared to be perceived as a proxy 'curriculum' by junior doctors, which could further curtail students' experiences, given their reliance on external staff for mediation. Moreover, facilitating students to complete their logbooks appeared to become a duty or responsibility for junior staff members who appeared reticent or disinclined to ask students to help with the workload if it wasn't assessment defined. An exception to this was during the 'Assistantship' module when asking students to engage in administration was legitimised to an extent.

*Nile: I guess having the **list** of, that's almost the things that I can help out with. And if I go and say 'oh, can you sign me off', or, 'I need to do these, can you point me in the right **direction**'. It's having that little bit of direction on the wards.*

Harriet: A lot of like the F1s are really good at asking about the logbooks. And being like, 'oh have you got things signed off, like, what do you need to do?'.

*Tony: So, I think sometimes there's a bit of worry that, it's like, 'oh we can't ask a medical student to do that. That's **boring** and it's not that useful.' Like discharge letters.*

One important consequence of shaping staff perspectives in this way is that it could lead to knowledge gaps. Indeed, even where students were keen to learn tasks not on the assessment agenda, the dominance of assessment driven learning appeared to be a barrier to learning alternative skills where they aren't on staff members' agenda.

*Harriet: Nobody wants to do admin! [laughs] but the thing that worries me is like, I'm going to get to being an F1 and I'm going to have **absolutely no clue** how to do any of it? Because I've never been able to practise doing any of it?*

Lee: But at this point I'm like, 'actually, I need to know how I do this'. I've, I've no clue how to use the computer system that I'm supposed to be using...And no-one ever shows you that stuff. No one ever shows you really how to do that. But that is sort of your bread and butter of having to do it as an F1.

In conclusion, the students focus on assessment driven learning as part of avoidant and cherry-picking behaviours appears to have shaped how staff members relate to them in terms of what learning opportunities students are offered or supported in engaging with. A particular consequence is the development of knowledge gaps in relation to tasks which aren't part of the assessed curriculum or weren't typically included. Indeed, the recognition that some junior doctors are being ill-prepared for aspects of their role has already been an impetus for curriculum re-design, for example the introduction of the 'assistantship' modules which in our context did appear to be shifting perspectives of legitimate tasks and expected roles (Monrouxe et al., 2018, Crossley and Vivekananda-Schmidt, 2015, General Medical Council, 2009, General Medical Council, 2022).

6.6.3 Learning and curricula design

A tension within modern medical curricula has been empowering students to be selective and self-directive in their learning whilst ensuring universal achievement of learning objectives considered mandatory for safe clinical practice (General Medical Council, 2009, McManus et al., 2020, Sharma et al., 2019, Riley, 2009, Dornan et al., 2005, Liu and Sullivan, 2021, van Houten-Schat et al., 2018). As described in the previous section, there was a tendency within our student population to 'cherry pick' experiences they considered desirable. Furthermore, it was unusual for students to remain on clinical placement for the expected duration and leaving early or retreating to non-clinical places was commonplace. This behaviour is consistent with studies of student log-books and anecdotal references, where there is a marked diversity of experiences for students following similar timetables or placement schedules

(Murray et al., 2001, Wimmers et al., 2006, Dolmans et al., 1999, Woods et al., 2011). One rationale for this phenomenon is that students are encouraged to take ownership of their learning as part of a self-directed approach and are empowered to make independent choices with respect to engagement with other aspects of the curricula (Liu and Sullivan, 2021). Indeed, a common theme within the participants was an expression of frustration that being self-directed with respect to time-management was discouraged or disallowed.

*Lee: But then continually being told by like, the medical school that you **shouldn't** be doing that, and you shouldn't be using like 9-5 you should be using that to be on the ward? But, if you're not doing anything on the ward... [laughs] then you'd rather be doing, like, studying!*

*Charlotte: I know we're supposed to be in nine to five. But if you're in nine to five and you're not getting anything done, and you're not learning anything. That's a complete, like, **waste** of a day.*

Moreover, it is challenging to evaluate the impact the reduced exposure to clinical environments relative to curricula expectations has on the overall learning for students. Perceivably there could be a negative consequence due to less chance of opportunistic learning from unexpected events. However, a contrasting perspective is that time away from clinical environments can be beneficial in consolidating practical knowledge with theoretical knowledge.

*Jason: You've just got to stay and try 'til five. And eventually, like, interesting things will **happen**.*

*Carl: I like to, to kind of **compound** that with going away, getting into the books, or getting onto the internet and actually **learning** about what I've learnt about during that day.*

For course organisers there remains a tension between encouraging a self-directed approach and encouraging student engagement with activities valuable for learning – even if not perceived as useful by the students.

6.6.4 Staff relations, clinical supervision, and social inequities

The previously described efforts taken by students to modulate their relationships with staff have important implications for their clinical supervision during placements,

where staff bear responsibility towards supporting the training, learning and development of students (General Medical Council, 2022). Dimensions of this role include providing a gateway to opportunities and in some circumstances providing summative assessments.

Roxy: The F1 just came up to me and goes, went, 'are you a medical student?' and I went, 'yeah' and she's like, 'do you want to do a cannula?' And I was like, [said timidly] 'okay.'

However, a potential downside to the norm of students impressing and connecting with staff to gain access to learning opportunities is the potential these behaviours have for cultivating differential treatment and even attainment. The role of age, gender, race dynamics and social class on student experiences of clinical placements has previously been described (Kristoffersson et al., 2018, Babaria, 2009, McGarvey et al., 2015, Vaughan et al., 2015, Beagan, 2005, Malau-Aduli et al., 2020). Students less able to make these social connections, where that is the norm, may be inherently disadvantaged (Beagan, 2005).

Tony: It's really nice turning up onto a ward and seeing, like, one of your mates...you just feel part of the team way easier.

Nick: I've got quite a lot of friends and things, in years above who are F1s, F2s, and CT, IT1s and things.

Furthermore, offering opportunities based on the strength of relationships rather than student readiness is another potential pitfall with respect to patient safety. One participant described the discomfort of being invited to participate in a surgical procedure they felt was beyond their skill set due to having successfully established a rapport and cultivating a positive impression of confidence.

*Lee: But it was more just, **seeming** confident, that got me invited to do it. And it, I've never done it before, and then I said, 'OK, well just, as long as you're supervising me, and just let me know and talk me through it, I'm happy to try'. And went on and did the procedure in question. But, I think, **that** sort of said a lot and that was what made me almost slightly worried that people might over-rate my confidence as, you know, being very competent, as an F1 and being slightly out of my depth... the surgeon*

said, 'you look like you know what you're doing'. Which, which, did stick with me quite a lot.

Interestingly this participant also attributes gender norms to the ability to exhibit confidence and considered females to be disadvantaged with respect to inclusion.

Lee: I think that it's pretty well documented that people over-rate the competence of males and men. Females are more likely to under-rate their own competence and be less confident even though they have the exact same skill...Where, you know, if you're not involved in a sort of group conversation, you're less likely to have someone say, 'oh do you want to do this?'

Indeed, there were no overt descriptions of discrimination described by participants. However, student who described the greatest challenge integrating into clinical environments was a member of the programme's widening access scheme and also from an ethnic minority group.

*Jason: And is this **my** problem rather than everybody else's problem? Is this something, is there a way that **I'm** presenting myself. Should I be, should I act in a different way so that people are more happy to teach me?'*

Workplaces within healthcare settings are well understood to have complex social dynamics and the practices of sexism and discrimination are unfortunately persistent problems (Rhead et al., 2020, Regenold and Vindrola-Padros, 2021, British Medical Association, 2021, Hamed et al., 2022). For students less able to navigate the social dynamics and successfully practise the strategic relational behaviours of impressing others and establishing connections, there are potentially significant negative consequences in terms of accessing learning opportunities. These behaviours can also be seen to serve and cultivate hierarchies of seniority which can lead to unhelpful learning environments supporting practices of interrogative questioning, student disempowerment and mistreatment (Vanstone and Grierson, 2019, Baird et al., 2016, Scott et al., 2015, McCarthy, 2016).

6.6.5 Specialty territories and fake interest

Finally, a predominant and potentially problematic behaviour described by students was their tendency to try and positively identify with the specialty of choice of staff members, in order to develop relationships. As described in the previous section, this interest was often exaggerated or even feigned by students to facilitate a positive relational encounter.

Jane: Students have said to me that sometimes they'll lie and say that they actually like this speciality that they're not doing because they know that the doctors will, the consultants'll teach them more if they think they're interested in it.

This finding resonates with a previous study where fourth year medical students described feeling intimidated by career discussions, fearing that unfavourable specialty resulted in differential treatment (Woolley et al., 2006). Indeed, even in anticipation of clerkships, students described worrying about deciding on a career path and impressing colleagues in relation to this (Soo et al., 2016). However, the tendency toward disingenuous behaviour is inherently concerning where it is at odds with the principle of 'probity' as outlined by Good Medical Practice and established ethical principles for medical professionals (General Medical Council and ComRes, 2019, World Medical Association, 2023). Moreover, arguably another potential consequence of this behaviour is to strengthen the 'boundaries' between specialisms and perpetuate favouritism towards students viewed as part of the 'tribe' over students who dissent (Burford, 2012, Kanjee and Bilello, 2021, Woolley et al., 2006, Oser et al., 2014, Bynum and Lindeman, 2016). Indeed, there was some evidence of students falling into tribes with respect to specialities, identifying strongly with specialities, or rejecting them because they didn't feel they fit in which had consequences for their involvement. One student also described a negative experience when expressing their specialist interest.

Jane: A surgeon once said to me, he was like 'oh do you want to do surgery?' and I was like 'oh no, but I quite like obs and gynae' which I thought was slightly surgical. And he was like 'obs and gynae's not surgery, it's butchery'. And I as like [sotto voce] 'Ok'.

*Jason: It just felt like I was being ignored... you know, feeling like a spare part for like six hours ...it just kind of likes, puts, completely puts you off? And, and actually probably puts you off, like, probably **can** put you off like a **specialty**. A specialty that you might, a speciality that you might otherwise be interested in*

*Jessica: On a most **basic** level, you know, we may, we generally know the **specialties** that we're interested in. So, someone will come up and say, 'oh that one, this patient you'll like them! They're, you know, psychiatry! I don't want that, but I know you do! You go see them'. And I'll say, 'oh! This is orthopaedics. That's one for you!'. Which obviously, it's like, it probably doesn't help in the long run because you, everyone needs experience of everything.*

Furthermore, a persistent problem in modern medicine has been the cultivation of negative attitudes towards particular specialisms which in turn has many consequences including on recruitment (Allsopp et al., 2020, Parekh et al., 2021, Oser et al., 2014). Indeed, stereotypical perspectives of specialities did appear to influence student evaluation of learning opportunities or experiences, particularly as part of the behavioural pattern of 'prediction making' as previously described.

*Esme: An obvious one is thinking like, trauma and orthopaedic surgeons have a reputation for, erm, being a bit **blunt** maybe? Erm. [laughs] Or, you know, not having like, not having any **time** for students. Erm. Disregarding, you know, your preference and not really caring if you have a good placement. Erm. And also being, sort of, the image, the word people use is always like, erm, like neanderthalish...so I was, I went into my, erm like trauma week on my surgical rotation thinking, [sounding despondent-] 'oh, like, this might not be good.' I was just like **prepared** for it was **crap** basically!*

To conclude, the students appeared to engage in behaviour which reinforced specialty boundaries which in turn impacted their learning experiences through differential treatment from staff members and their own prediction-making which was liable to bias. The study context also appeared to foster insincerity in students with respect to expressing their specialist interest and career intentions which is at odds with the principles of good medical practice which the curriculum was intending to instil.

6.6.6 Conclusion

Students' patterns of behaviour during clinical placements have the potential for far-reaching implications for their learning during placement, not all of which are readily described. In relation to learning through engagement with patients, students' tendency to be selective in their interactions and to model consultations based on assessment formats may detract from holistic learning and a patient-centred approach. Assessment driven patterns of behaviours of 'avoidance' and 'cherry picking' may be influencing professional development and preparedness for practice through limiting breadth and experience of learning opportunities. In relation to the nature of staff-student relationships, students' behaviours towards those supervising them have the potential to exacerbate existing inequities and preferential treatment according to demographics. There is also potential for perpetuating specialty denigration with particular implications for recruitment and career development.

6.7 Conclusion: patterns of behaviour and the relation to learning

Through analysis and assimilation of medical students' accounts of the activities they undertake during clinical placements a framework for understanding students' patterns of behaviour has been established. General patterns of approach are considered in terms of the initial approach to opportunities, the process of engagement and the intended outcome of activity. This conceptual understanding has then been related to trends in student interaction with specific opportunities, for example decisions around attendance and management of workplace relationships. In particular, patterns of behaviour intending to encourage favourable student treatment by staff were especially prominent. The broader implications of students' patterns of behaviour during clinical placements on their learning in clinical environments remains to be fully appreciated. Potential consequences include influencing student preparedness to practice and perpetuation of unhelpful learning environments.

6.8 Link to next Chapter

The following chapter addresses 'contextual influences' as a unique dynamic influencing student decision-making. It presents the next phase of the study which involved focus groups with third and fifth year students.

7. Chapter 7 - Phase C Focus Groups on Contextual Influences

7.1 Introduction

This chapter presents the methods and findings for the third phase of the investigation. The process of collecting data via focus groups will be described in detail, elaborating on the methodological outline provided in Chapter 3. The sampling process and characteristics of the sample of Year 3 and Year 5 medical students will be described. The key findings and themes will then be presented in relation to the research objective for this phase of the investigation. These findings will also be revisited and cross referenced in Chapter 9 as part of the development of the over-arching conceptual model (see investigation aim).

7.2 Methods

7.2.1 Revisiting objectives

This phase of the study was designed to answer the study research questions by addressing the following research objective:

- Objective Four: To explore medical students' interpretations of what are perceived to be significant contextual dynamics influencing how they approach and experience clinical placements in order to develop an understanding of the relationship between context and student engagement during clinical placements.

The purpose was to contribute to the over-arching conceptual model of the study by exploring how medical students' interpretations of the setting and circumstance of clinical placements influence their experience of clinical placements and engagement with opportunities. Focus groups conducted with students were intended to facilitate co-construction of significant contextual dynamics and the influence on student engagement. This was considered especially relevant due to the advent of the COVID-19 pandemic as a unique context for learning. However, as the aim for this investigation was not intended specifically to address the influence of the pandemic, findings pertaining to this dynamic are referenced only when they directly relate to key aspects of the over-arching model.

7.2.2 Data collection– focus groups

The focus groups were conducted remotely by the principal investigator by videoconference using Microsoft Teams. The process was planned to take one hour in total and followed a pre-prepared topic guide (Appendix L). The focus groups began with an ice-breaker activity followed by a short group activity where participants were invited to describe their first impressions of entering a recent clinical context through using three words or producing a diagram. These activities were incorporated into the data collection process as well as serving to promote discussion within the focus group (Barbour, 2008, Bryman, 2016, Sharma, 2020). Indeed, asking participants to use drawings to represent their experiences, a method known as ‘diagrammatic elicitation’, can be a highly effective tool in facilitating participants to communicate meaning in relation to the phenomenon (Bravington and King, 2018, Haidet et al., 2008). Due to logistical restraints, the diagrams produced were not formally analysed but enriched the explanations provided by the participants. An alternative exercise of giving three words to describe the experience was also provided as an option in case of participant discomfort with drawing (Bravington and King, 2018, Kearney and Hyle, 2004).

The conduct of the online focus groups followed the best practices established in the literature (Lobe, 2017, Fox, 2007, Archibald et al., 2019) and discovered through engaging reflexively with participants using a post-participant survey. These processes are described in more detail in Appendix C and were published in a peer-reviewed journal article published during the course of this investigation (Osborne et al., 2023)(Appendix D). Two focus groups were undertaken with a cohort of students in Year 5, and two with a cohort of students in Year 3. Focus groups were sized at 4-6 students per group, as per the optimal group size for video-conference focus groups (see sampling and recruitment section Chapter 3). Video data of the focus groups was collected for the purposes of transcribing the audio component of the focus groups and were not analysed as this fell outside the remit of the study and posed ethical challenges.

7.2.3 Recruitment, sampling and consent

Rationale

A key purpose of this phase was to develop an understanding of the sociocultural context of clinical placements to further contextualise the interview data. Students were therefore recruited from Year 5 to correspond with the samples of participants taking part in the previous interview-based Phase B. Given this work highlighted the importance of peer dynamics, focus groups were homogenous with recruitment based on the pre-existing tutor groups to capitalise on existing peer-to-peer relationships. This phase of the study approached different students than the cohort that had been invited to the interview phase. This minimised participant burden and enabled freedom for group discussion without being tied to previously expressed views.

In addition to the Year 5 sample, participants were also recruited from Year 3 of the medical programme. Year 3 students were considered likely to provide 'rich' data, because they were embarking on their first significant clinical placements. It was anticipated that their perceptions of different contexts would be more accessible compared to in later stages where impressions may be more embedded and unconscious.

Regarding the setting, students were sampled during their early experiences of clinical placement at their respective stage of training. These placements followed a hiatus in face-to-face training due to the disruption caused by the COVID-19 pandemic and represented the students' first formal experiences of clinical placement since the pandemic began (see timeline in Chapter 1). The intention was to conduct focus groups early on in this period, as it was hypothesised that their perceptions of the clinical environment would be the most acute and accessible during their 'first impressions.' The Year 5 students were recruited during their clinical placements in paediatrics which combined both community and hospital exposures. These students were also encouraged to reflect across the breadth of their experiences to date which included experiences in primary care. The Year 3 students were undertaking placements in medicine, surgery and critical care which included weekly experience in a local GP practice. For both groups, focus groups were scheduled at a time when the students had sufficient clinical experience to

participate in discussion from experiences across at least two specialties/rotations at their stage of training.

Inclusion and exclusion criteria

Inclusion criteria

Participants had to meet the inclusion criteria and none of the exclusion criteria to be considered a participant in the study.

- Stage of training: Medical students at Year 3 or 5 of training of the MBBS programme at Newcastle University in September 2020
- Place of training: Medical student assigned to Northumbria Healthcare NHS Trust as their 'base-site' for Year 3 or Year 5 placements in September 2020

Exclusion criteria

- Refusal of consent
- Students allocated to the principal investigator as supervisees
- Students with whom the principal investigator considered they had a personal relationship with

Sampling strategy

Sample B was formed by inviting an entire tutor group of Year 5 students taking part in their second 3-week clinical placement of the year. Numbers were sufficient to form two focus groups. Plans for additional recruitment of students were not employed as the richness of data collected was considered sufficient for understanding the study concepts. Sample C was formed by inviting a tutor group of Year 3 students taking part in their first clinical placements of the year, across placements in medicine, surgery and critical care. An outline of the recruitment process is demonstrated in Figures 27 and 28.

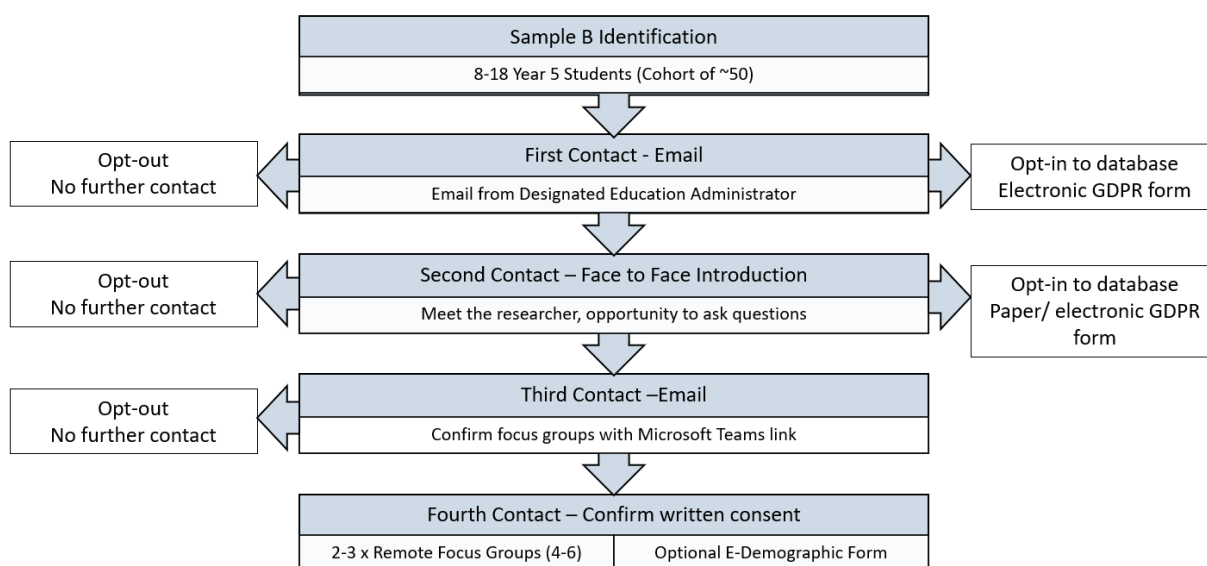


Figure 27: Year 5 sampling overview for remote focus groups

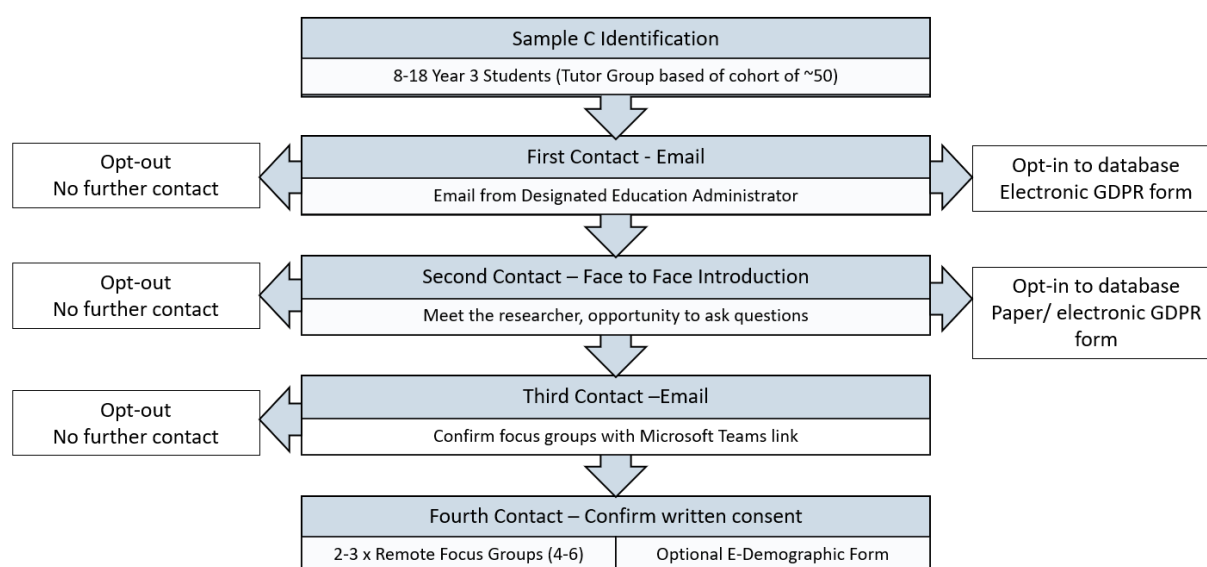


Figure 28: Year 3 sampling overview for remote focus groups

Consent process

A minimum of 72 hours cooling off period was ensured between the students receiving information about the study and the focus groups being scheduled. A verbal and written consent process took place at the information meetings which provided an opportunity for students to ask questions. Verbal consent was confirmed

immediately prior to participation in the focus groups. No more than 12 weeks elapsed between provision of written consent and focus groups taking place.

7.2.4 Data analysis strategy

Analysis of the focus group transcripts followed the inductive process outlined in Chapter 3. Line by line coding initially developed approximately 1000 open codes. Subsequently, focused coding, axial coding and theoretical coding was undertaken to develop 4 themes and 11 sub-themes. Two of the 18 transcripts were independently blind coded by the first PhD supervisor to facilitate a reflexive conversation about the analysis process and support rigour (see Chapter 3 for more details) with an on-going discussion on findings involving all supervisors as analysis progressed.

7.3 The Sample

7.3.1 Sample development, characteristics, and purposive sampling

The study samples were formed by inviting students from pre-existing tutor groups. These were selected partly at random to give a representative sample of the overall cohort and partly according to the timing of their placement experience to ensure adequate exposure to the studied contexts. 8 out of 11 Year 5 students from two tutor groups approached participated in this phase forming Sample B with two focus groups conducted comprising four students each (73% response rate). 10 out of 16 Year 3 students from two tutor groups participated in this phase forming Sample C, with two focus groups conducted comprising five students each (62.5% response rate).

The average duration of the recorded focus group component was 50 minutes and 53 seconds with a range of 47 minutes 44 seconds to 52 minutes 39 seconds. All participants engaged in each element of the data collection process apart from one participant in Sample C who dropped out following recruitment. All participants opted to provide demographic data (see Chapter 4) (Table 11).

Combined demographic data of Sample B and C

Measure	Category and Participant number			
Age	18-24	25-29	30-34	35-39
	17	1	0	0
Gender	Male	Female		Other
	8	10		0
Graduate status	Undergraduate		Graduate	
	14		4	
International student	International/EU Student		Non-International/EU Student	
	1		17	
Widening access status	Widening Access Student		Non-Widening Access Student	
	3		15	
Ethnicity	White	Mixed/Multiple	Asian	Black
	14	2	2	0

Table 11: Sample according to demographic characteristics

7.4 The Findings: considering context and overview of key themes

This investigation considers the 'context' as the conditions in which a set of circumstances exist. As described in Chapter One, students typically are placed in a wide variety of environments, often across short time periods which they are expected to navigate relatively autonomously (Fuller et al., 2021, Nyoni et al., 2021, Walters et al., 2012).

Duncan: As medical students we move around a lot. But even, even like in the same day we can go to two different departments. ...I think I think, especially if you are doing two in the same day you almost, you never feel comfortable anywhere because you're always moving around...I think it just leaves it all very uncertain and it kind of feels like, especially for the first like ten, fifteen, twenty minutes until you get settled doing something. You kind of feel like you're just stood in the middle of a ward, or the middle of a department thinking like, 'Why am I here? Like, what am I going to do?'. It does feel really uncomfortable.

Given the multiplicity and rapidity of movement between placement environments, the nature of first impressions and early experiences on entering a context is a significantly influential period.

*Liam: It's quite a bizarre position when you first go in trying to figure out where you **should** fit into all of this and you know what you can do.*

One theme which will be explored in relation to this time frame is the experience of being 'lost and found' as a physical, social and emotional phenomenon. A related theme during this early phase of 'entering' a novel environment is a student's degree of connectivity with clinical environments. This will be explored with respect to students' occupation of physical space and how relationships with staff members are established. The ongoing experiences of an environment will be considered from the perspective of the 'workplace climate' or the conditions for the delivery of patient care. This will be explored from the perspective of how students generate an overarching impression of the 'climate' and the explicit dimensions contributing to this, namely the student dynamics, staff dynamics and the conditions pertaining to the workload of clinical care. Finally, the relevant contextual features outside the immediate clinical placement experiences will then be explored with respect to students' personal lives, their status as learners within a university and the expectations of clinical placements derived from personal experience or through peer consultation. The framework developed from Chapter 5 will be re-visited from the perspective of the contextual factors determining how students navigate between different clinical placement environments. Figure 29 provides an overview of these themes and how they relate to each other.

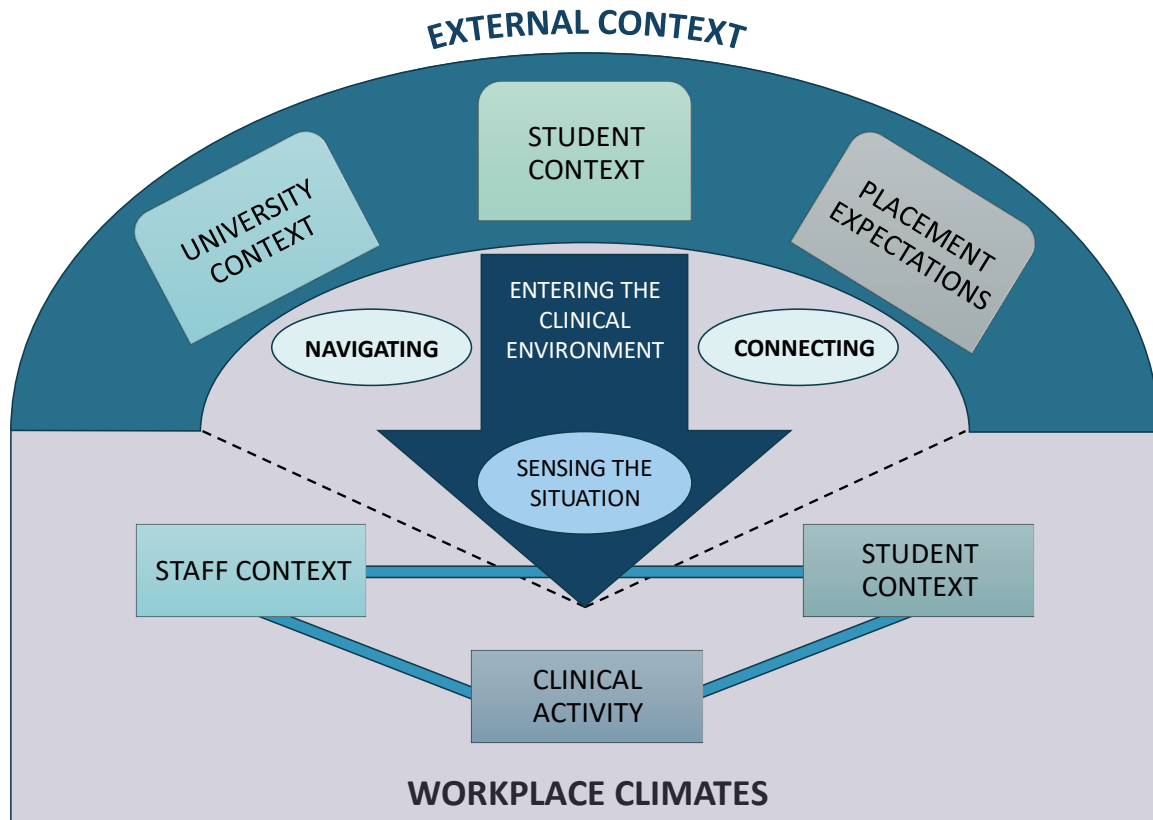


Figure 29: Mapping contextual influences of how students approach and experience clinical placements

Figure 29 Legend: This figure represents the main contextual influences on student engagement with opportunities. At the top of the diagram are the 'external influences' which relate to the student's personal life, factors relating to the university and how prior expectations of clinical placements are generated. Concepts mapped on to the grey background are those which relate to the clinical environment. At the bottom, a sense of the 'workplace climate' is generated from an interaction between the clinical activity, the staff situation and the students' personal life. In the middle, the initial period of entering a clinical environment is represented by a dark blue arrow and the dashed lines, where this period is critical for navigating workplace climates and developing a sense of connection with environments.

7.5 Navigating from 'lost' to 'found'

7.5.1 Introduction

This section addresses students' experiences of orientating themselves to clinical environments and the associated positive and negative influences relating to how they engage with learning opportunities. The experiences of being 'lost' and 'found' are characterised in turn, with consideration given to the factors influencing students'

sense of orientation. Aspects of the physical environment and the social context relating to navigation will be explored in addition to the formal structures in place to support orientation. How these aspects relate to each other are captured in the summary diagram below, Figure 30.

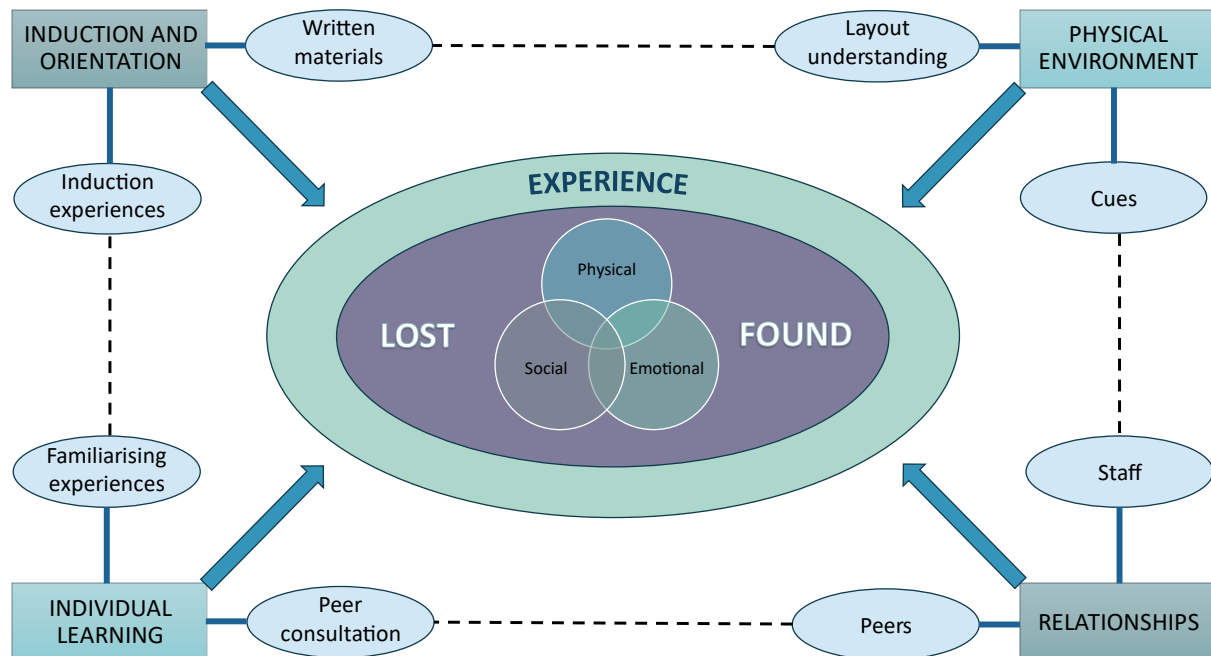


Figure 30: Map of student experiences of orientating to clinical placements

Figure 30 Legend: Central to this figure is a student's sense of being orientated towards an environment according to whether they experience a feeling of being 'lost' or 'found'. These concepts incorporate physical, social and emotional factors. The factors which influence the process of being orientated are represented by the elements in the surrounding square, where the main factors are at the corners and the associated elements situated next to them. The dashed lines represent the connections between these concepts.

7.5.2 Feeling lost or found

The experience of entering a new clinical environment can be characterised according to a spectrum of feeling 'lost' or 'found.' These conceptual states are heterogenous and determined by physical, social and emotional factors which are inter-linked and often determined in the early period of arriving.

Fraser: But it was definitely at the start it was very... you're in a different environment and physically you just have no idea where you're going once you've got through the door. Which took you 20 minutes to find.

Gary: Literally like 30 seconds to a minute and then you just feel like you're in, you're like in the right place and it just kind of sets you up.

7.5.3 Physical determinants of feeling lost or found

Physical and structural determinants of feeling lost included challenging hospital layouts with deficient signposting and transport challenges when traversing wide geographic areas. These difficulties could be compounded by timetable deficiencies and improved with formal orientation processes. Recognition of patterns and cues over time helped some participants navigate physical difficulties such as identifying common structures and learning to identify staff according to uniform colour or lanyard.

*Liam: Having told just being told, 'turn up to Ward X on this day' was incredibly **bewildering** when the hospital is the shape that it is and is quite different from every other hospital.*

Dominic: [the hospital] is split across three sites. So, I think every time you went somewhere you were kind of like, 'I've got no idea where I'm going'.

Eve: I feel like every ward like had... the doctor's office was always in the same place? So like whenever I went somewhere, I was like, 'I'll just go straight there because there might be someone there who can help me'.

*Liam: Staring at the lanyards and seeing what level they're at! [laughs]
They're quite helpful giveaways now!*

Gary: If there's parking that kind of stuff just makes you feel like so much more at ease 'cause you don't have to stress about being late and then add an extra 20 minutes just to find it.

Considering the latter, the participants also valued being easily physically identified as students via their 'uniform' (scrubs in a unique colour).

*Fraser: But the scrubs definitely highlight that. If they know that then...
they can see you, find you.*

Liam: I see the point of them, of having a different colour for medical students. ... It's good that they immediately know that you are a medical student and I think it often helps.

Indeed, it is well established in the literature that hospitals can be challenging environments to navigate because of their size, complexity and lack of forward planning in design (Devlin, 2014, Hughes et al., 2015, Zenka et al., 2021, Mollerup, 2008, Li et al., 2015). Recognised barriers to navigation include haphazard layouts, inadequate signage, ambiguous naming of areas and security restrictions and prohibitions (Mollerup, 2008, Hughes et al., 2015). Logistical challenges of navigating clinical placements are well recognised in the literature addressing 'transitions' (Salminen et al., 2016, Johnson et al., 2019, Tanna et al., 2020, Masters et al., 2013, O'Brien et al., 2007, Teunissen and Westerman, 2011, Atherley et al., 2019). Moreover, existing studies emphasise the importance of clear timetabling and adequate induction to support orientation (Cotter et al., 2016, Atherley et al., 2019, Dornan et al., 2007).

7.5.4 Social determinants of feeling lost or found

In addition to the physical experience of being lost, the participants described feeling lost due to social isolation which caused negative emotional states. These compounding influences were particularly prominent in unfamiliar or specialist environments or in the absence of peer support.

Gary: I really thought that surgery and theatres were almost like a secret club and I didn't know how to access that. I didn't, didn't know where I was going.

Moira: I don't know any other students, there was no other students there so I showed up and just asked someone where I should go, but then I was like sat in the room for like over an hour?!...so that can be a bit daunting.

*Dominic: I think I always get slightly nervous when it's just **me**... when you're on your own you're always like, 'oh! I could just be like, sat around awkwardly or like looking stupid for a while'.*

At the other end of the spectrum students had a sense of being 'found' through establishing social relationships which in turn promoted navigation success.

Fraser: I drew a smiley face because I knew who the staff members would be there, 'cause I'd already been there two days previously. So I knew who

they all were, and I knew where everything was. So I knew sort of what I was doing so I just went there, cracked on!

Particularly transformative was the anchoring effect of having a named 'contact point' – one key individual whom the students could gravitate towards or who deliberately took responsibility for orientating the students. In some placements this was a formalised responsibility for an individual with a dual education/clinical role. However, this need could equally be fulfilled by proactive actions of clinical staff in areas providing minimal intervention.

*Wendy: I do think that that feeling of like being intimidated is helped really easily though if just **one** person says, 'oh you can come with me'. Because it's that feeling of being lost and... not know what to do that's really the problem. Rather than anything else. So as soon as someone like takes you under their wing it's so much... It just feels so much better. Immediately.*

Gary: What we found with [placement type] is that we had one very clear go-to person. If anything went wrong, just contact them and they can either sort it or signpost you. And that is so invaluable. Just knowing exactly where to go if something goes wrong is really helpful.

Indeed, the importance of having a named supervisor or someone to 'attach' to is highlighted in the existing literature (Liljedahl et al., 2015, Barrett et al., 2017, Dolmans et al., 2008, Remmen et al., 2000).

In the absence of a contact point, the students were adaptive in social manoeuvring to facilitate social inclusion. One tactic was attempting to draw staff attention through trying to express 'deliberate helplessness,' purposefully looking lost or out of place as a cue for intervention. Another perhaps more constructive strategy was engaging with existing patient handovers and capitalising on these as an opportunity to introduce themselves.

Caroline: I feel like if you're standing looking lost and, like someone like a nurse or like, some, like healthcare assistant knows that you're a medical student, they'll know that there's a reason why you're standing there.

Fraser: 'Cause you turned up with all of the new staff and they all introduce themselves to you and they know who you are...it's somewhere to go to

when you turn up to the ward. You just ask where handover is and they send you to where handover is. Instead of just standing around lost.

Liam: I kinda just go for the turning up standing next to the huddle of doctors looking rather lost and hoping that one of the people pick me up!

The students felt more comfortable returning to clinical areas which they had already encountered and made sense of workplace rhythms. In contrast, attending specialist areas which were unfamiliar could be particularly challenging, a finding echoed in the literature (Lyon, 2004, Lyon, 2003, Stark, 2003, Baecher-Lind et al., 2015, Cotter et al., 2016, Johnson et al., 2019, Boor et al., 2008, Kappy et al., 2019, O'Connor et al., 2017).

*Dominic: 'Cause I've had an acute shift now when I go back for mine on Saturday or Sunday whenever it is, I'm going to be so much **calmer**. 'Cause I know who to expect, who's there and there's just that reassurance that you **know** that people are nice.*

Liam: When it's, you know, either the ED or critical care, just to know you know...it is significantly different from on the ward and it's significantly different from you know, on the ward it's sort of much more stable environment that you can sort of get to know.

Peer support was provided through sharing practical experiences and practical tips for navigation. Indeed, the literature recognises the 'grapevine' of peer support (see Chapter 2) and how orientation can be facilitated through both informal and formal mechanisms (Jaye et al., 2010, Masters et al., 2013, Chou et al., 2014, Bransen et al., 2022). The availability of other students' timetables was an unintentional but valued source of information for the participants of this study.

Eliza: I think also knowing other people's timetables because then if you are at somewhere new where you don't know, then you can have a look on the timetable and be like, 'oh who's been there before me? Let me ask them like how to get there and if there's parking'.

Indeed, timetables and physical orientation aids such as local handbooks were contentious aspects of navigation support. Minimal information contained in timetables was considered omissive and frustrating whereas students appreciated detailed annotations which facilitated navigation. Notably, although the

comprehensive information provided in handbooks and local guides was valued by some, these were often overlooked and not consulted.

*Duncan: I think it's helpful as well as like on the timetable. We've had some that are annotated with little notes, there's information on the side. For example, like an afternoon theatre might start at 1:30. But if you want to go on the ward down and consent patients for examination, you can get there an hour earlier and meet the doctor **here**.*

Fraser: All your timetable says is, 'Ward X!'. And you're not really told what you're expected to do there, or get signed off, or what Ward X even is.

Caroline: I think here it's quite helpful the way they have the local logbook things for each rotation. And it kind of gives all the things that you'll be assigned to on your timetable, and what you might like expect to do there.

*Dominic: [about handbook] It's hard 'cause it's like **buried** in amongst like a mound of resources... so like when you do find it you're like, 'Ah yes! Actually this is quite good!'.*

*Fay: I know that [name district] gave us like a **rainy day** guide? I don't, I haven't, I haven't looked at that. Maybe that's what I'm after?*

Research focused specifically on how useful students perceive handbooks to be stresses the importance of the mode of delivery of handbooks and found that students favoured logistical elements and specificity over general advice and description (Atherley and Taylor, 2017).

The sense of being 'lost' or 'found' had wider implications for student engagement, often in association with the inducement of positive or negative emotional states. Students who felt lost also often experienced bewilderment, dread, intimidation and awkwardness which as per Chapter 5 inhibited engagement. Losing time on placement also could feasibly lead to an opportunity lost.

Wendy: Because it's that feeling of being lost and... not know what to do that's really the problem.

Moir: I showed up and just asked someone where I should go, but then I was like sat in the room for like over an hour?! Waiting for someone to come get me.

On the contrary, feeling 'found' was associated with positive emotional states and increased student involvement with activity.

Fraser: So I knew who they all were, and I knew where everything was. So I knew sort of what I was doing so I just went there, cracked on!

7.5.5 Conclusion

The experience of being 'lost' and 'found' can be examined from physical, emotional and social dimensions. Factors influencing the sense of orientation include the nature of the structural environment, the experience of relational support and the extent students feel prepared for experiences which is in turn influenced by formal induction processes or navigation aids. The negative impacts of being 'lost' include the induction of negative emotional states and loss of time which can also be considered inhibitory in terms of student engagement and learning. The contrary experiences of feeling orientated may on the other hand promote student engagement, particularly in unfamiliar or specialist areas.

7.6 Connectivity, association and the physical and social environment

7.6.1 Introduction

Related to the sense of being 'lost and found' is the phenomenon of whether students feel connected or disconnected with the workplace, the workers and clinical activity. This sense of connectivity and association is dependent on integration into both the physical environment and the social context. Patterns of physical disconnection include the student being an 'obstacle' in the way, or 'rebounding' being passed from pillar to post. Patterns of social disconnection include the student being 'invisible' to those around them, or standing out as an 'intruder' for not belonging. In contrast the socially connected student is 'incorporated' into social spheres and the physically connected student is 'linked' in a structural way to clinical activity. These manifestations are outlined in Figure 31 below and will be considered in detail in the following section.

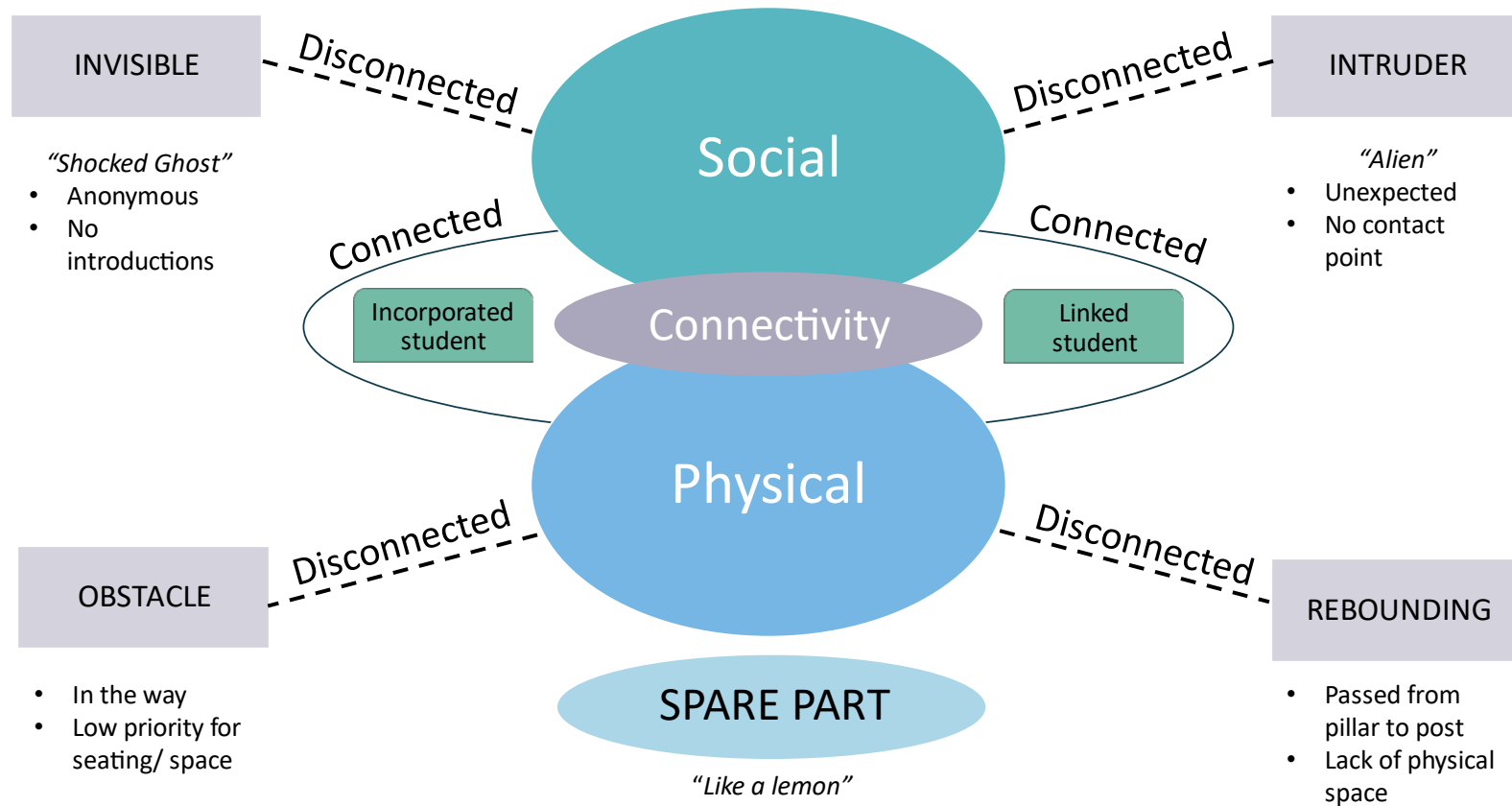


Figure 31: Map of student sense of connectivity to clinical placement environments

Figure 31 Legend: At the centre of this diagram is the concept of whether students feel connected to a clinical environment. This sense can be both physical and social. Manifestations of being connected are the 'incorporated' and 'linked' students. Then on the periphery are manifestations of being disconnected. Social factors are included in the top two grey rectangles, whereas physical factors are included in the bottom two grey rectangles. Text in italics represents illustrative quotes from the students.

7.6.2 Physical connection and disconnection

On entering clinical placement, staff and students make explicit and implicit decisions determining how students will physically engage with the material environment. The outcome of this decision-making has consequences regarding students' perception of connectivity with workplace activity and the likelihood of engaging with learning opportunities. Structural determinants of particular contexts govern student positioning to some extent, but in many cases, this is socially determined, or compounded by social influences.

Where students did not feel like they had a legitimate physical location to occupy, they felt 'in the way' or perceived their presence as an obstacle to workplace activity.

Georgina: Whereas for those first 10 minutes you just hover and you're just sort of like dodging people and trying to look approachable... like it's just very awkward.

Liam: Just that I agree with Hugh, it's quite a bizarre position when you first go in trying to figure out where you should fit into all of this and you know what you can do without being too annoying, or you know... getting in the way.

An overt manifestation of this was the hierarchy attributed to seating, with students expected or implored to surrender their positions for other staff members. The COVID-19 pandemic further exacerbated rationing of physical space.

*Liam: Last week, the consultant on my ward said **four words** to me the entire week and they were, 'can I have that seat?'. When I was sat in his seat.*

*Caroline: I think I kind of feel a lot more like in the **way** places. If you 're sat in the doctor's office and the doctor's trying to teach you and other people want to be in there, but there's only allowed to be like **three** people in the doctor's office at a time because of space, you just feel like you're really like, erm, **imposing** on like people who need to be there, in their environment.*

The demand and hierarchy for occupying physical space is also manifested in the students' frequent allocation to the periphery of activity. This compounded a sense of

being unwanted or a 'spare part' and contributed to disengagement practices. Prime examples of this were during ward rounds where students occupied a position on the edge of standing activity or during clinics where students were frequently put in the 'corner.'

*Eve: 'Cause I feel like **half** the time you're there, **no one** talks to you or like acknowledges that you're there, you're just like a little tagalong at the end.*

Fraser: The consultant stays in the room and they end up doing the thing and you just sit in the corner... sitting there like a lemon in the corner.

*Dominic: In fact clinics can either be **amazing**, 'cause you're the one able to kind of take the history, do the examination, or they can be **awful** 'cause you're just sat in a corner feeling like a spare part?*

Georgina: Just hover and maybe go on a ward round or something and just tack on the end, but then I'd just leave because it just didn't feel like I had any acknowledgement

This resonates with findings in the literature that students have a tendency to occupy a position on the periphery or background (Tai et al., 2017, Jaye et al., 2009, Horner et al., 2020). The medical education community is also increasingly recognising the intersection between physical space and workplace learning and behaviours (Nordquist et al., 2019, Kennedy et al., 2020).

Finally, a third common physical manifestation of disconnection is the 'rebounding' student. Whether due to space constraints, misidentification, disorientation or reluctance for staff members to take responsibility for students, students describe being physically diverted between different places and staff members. This sense of being 'passed from pillar to post' was characterised by demotivation and dissatisfaction. The counter experience of finding stability in a dedicated space was a sense of wellbeing. This resonates with the existing literature that in clinical environments students preferred to have their 'own' room which conferred status and identity (Salminen et al., 2016, Horner et al., 2020, van der Zwet et al., 2011, Thomson et al., 2014, Kjaer et al., 2022).

Dominic: I found that I would be kind of punted from post to post [gestures from side to side with hands] and nobody really wanted to kind of be with

me...They then sent me to somewhere. And then those doctors then sent me somewhere else. And then those doctors then sent me to the consultant, who then like sent me to like downstairs somewhere... And it was just like being passed around and it kind of makes you think like, 'why am I being enthusiastic and like looking for these learning opportunities when like nobody wants to have me around?'

*Dominic: I turned up and they weren't expecting me...I showed up to this clinic and she was quite frosty about the fact that I **couldn't** be there because the room was too small because of Covid. And she just like sent me away! And it was quite like **embarrassing** a little bit, like, **humiliating**.*

Hugh: I was told to go to [surgical unit] which I did and then I asked at the reception for, I didn't know who I was going to. I was just told to go to the registrar? And they had to ring them up and then I got sent to a different ward to go and find them. Which they were, they then weren't at that ward. And I was told that they may or may not show up to that ward

Eliza: And it was just nice to be able to like be put in one room and them be like, 'Oh yeah, I'm expecting a medical student. That's fine. Come on in.'

The contrasting experience is that of the 'linked' student, who on entering the clinical environment is immediately given a strong sense of physical connection to activity through allocation of space or staff engagement. Provision of a dedicated room to consult from was particularly transformative in increasing a sense of involvement with an activity.

*Dominic: So, I think when there's room built in for as a student for you to get **involved** and to do things, it makes it a more worthwhile teaching experience and therefore you come away feeling like you've had a better time? 'Cause, you know, it's more stimulating and usually you're kind of getting bit more out of it.*

Liam: The person who you know, grabbed me along was very, very helpful and you know, and I spent I think, I ended up spending most the day with sort of that individual because they were very happy to sort of go through and sort of teach me what was going on.

Wendy: They've all been really, really lovely...make sure we are with someone and then when they came round, seeing new patients, taking us with them, asked us questions. So, I actually think I've had a good experience with consultants in my Ward.

Interestingly, students did appear less cognisant of their physical presence when they felt connected to activity, which suggests that social engagement can overcome physical limitations. Indeed, there is a suggestion from the psychology literature that awareness of physical presence is diminished when at ease (Clegg, 2012, Kadambi et al., 2020).

7.6.3 Social connection and disconnection

Related to feeling 'lost or found' and physical connectivity is a sense of social connectivity with environments. This overlaps with the former descriptions but also has some distinct manifestations which are useful when considering intervention. Two manifestations of disconnection are the 'intruder' and 'invisible' student. In contrast the 'incorporated' student is a manifestation of being connected to environments and is closely associated with the 'linked' student in the previous section.

Considering firstly the 'intruder' student who feels at odds with the environment and is cognisant of being negatively received or identified by others: this state was particularly manifest when students were not expected in a clinical setting, which could make them feel like they were imposing and led to disengagement. Whereas contrastingly, being expected made them feel included and induced positive affective states.

Georgina: 'Cause if they're not [expecting you], you almost feel like no matter how friendly they are, you feel like you 've sort of intruded on their plan or their schedule or... Right, you're adding more work that they've gotta find something for you to do.

*Duncan: I think sometimes it's almost like a bit of **guilt** when you turn up somewhere and they're not expecting you... I sometimes feel a bit guilty for like **imposing** on a, on a place. 'Cause they have to look after me?*

Eve: It's always like extra nice when there's somebody waiting for you.

Eliza: If they're expecting you then you kind of feel like they want you.

This status of feeling like an 'outsider' is something borne out in the literature evaluating students' experiences on clinical placements (Talib et al., 2024).

Secondly there is the 'invisible' student who feels anonymous, ignored by key workers and detached from clinical activity through lack of acknowledgement. One participant characterises this richly as being like a 'shocked ghost.'

*Gary: I went for like a bit of a shocked ghost, 'cause I felt like I was a bit like floating around...Wasn't really like **attached**... you know what I mean?*

Fay: The main consultant. There was only one of them. He didn't say a single word to us for the whole week.

*Eve: 'Cause I feel like **half** the time you're there, **no one** talks to you or like acknowledges that you're there*

Georgina: I'd just leave because it just didn't feel like I had any acknowledgement that it was alright for me to be there...Like I just want someone to say hello!

A key contributing factor to this state appeared to be lack of personal recognition. This could be transformed by simple introductions and exchanging of names. This resonates with the literature which emphasises the importance of welcoming students and personalised interactions (Sheehan et al., 2017, Gathright et al., 2016, Dornan et al., 2007).

Moreover, students felt empowered when they were equipped with the name of someone to direct their attention towards. Indeed, the exchange of knowledge of 'names' had a transformative impact on a student's sense of connectivity in workplace relations, a finding echoed in a recent ethnography of nurses (Feltrin et al., 2019).

Hugh: Because all I had to go on was, 'the registrar', which is just a bit difficult from my perspective.

*Dominic: Today you are **here** and this is the person that you should go and see. Or this is the person that you're like in clinic with or is guiding you*

*through like Paeds A and E or whatever. And it's just nice knowing that you have a **name** that you can ask somebody if they're there.*

Vinnie: All the nurses seemed like they had a lot of time and they all said hello. And even the receptionists like, just greeted us and like made sure everyone knew who we were like and what we were there for.

Fay: And then that's the one doctor that says hello and asks you like how they can help? And yeah, I just thought it would, when you first go in, everyone's got some things to do and they're all busy and you don't want to get in the way.

This leads to discussion of the state of the socially connected student, conceptualised as the 'incorporated' student. This state is characterised by feeling welcomed, having a sense of knowing staff and being expected. Contributing factors include those stated above, but also the proactive steps of students to become known. Indeed, some participants took deliberate action to forge social connections with staff members which reaped rewards in terms of inclusion.

*Georgina: Yeah, I feel like almost we've been **more** welcome than we ever have been before! And I don't know whether that's partly because we're final years.*

Georgina: In terms of being attached or not, I think it's really useful when they're expecting you, and if they know that you're coming, it makes a world of difference.

Simon: Instead of just being polite and asking, it's being direct and say, 'I've been sent here to do such and such, so what do I need to do, where can I be?'. And almost taking that, the decision of 'yes you can and can't be there' away from them and forcing yourself into a situation. And then you can just go stuck in from there.

7.6.4 Conclusion

A student's sense of connectivity to a clinical environment was influenced both by their social interactions and by their physical accommodation within environments. These inter-linked factors in turn impacted on students' engagement with activity. With respect to social connections, the importance of being 'expected' in a clinical

environment and having a designated contact point was particularly prominent. Significant physical manifestations of being disconnected included being diverted between places and people, peripheral positioning of the student and an absence of a dedicated space to learn from. Characterisations of disengagement due to the physical and socially determined interactions included the 'invisible student/spare part' and the 'intruder/rebounding' student. Characterisations of engagement were the 'incorporated/linked' student.

7.7 Workplace Climates

7.7.1 Introduction

The following section addresses the social, cultural and emotional architecture of the workplace conditions students experience whilst on clinical placement. This will also be referred to as the 'climate' of clinical contexts, a construct which will be developed from the student perspective. Firstly, the climate will be described according to axes commonly used to characterise the overall 'sense' of a clinical environment as perceived by the students. The individual dimensions of the climate will then be explored including the role of staff dynamics, the student body and the clinical workload.

7.7.2 Sensing the overall workplace conditions

Chapter 6 outlines the participant pattern of behaviour 'sensing the situation,' where students undertake early evaluations of contexts and situations upon encountering them (see Section 6.3.1). From the perspective of navigating different workplace contexts, this process can also be understood as students taking a reading of the 'climate' as a representation of the collective workplace conditions. Common generalisations were used to describe the climate which are described below according to several axes. These include how welcoming an environment is, how structured clinical activity is, the intensity of the environment and the affability of staff. These are summarised in Table 12. This overall immediate impression of the environment or 'gestalt' likely incorporates multiple elements including the staff, students, the physical environment and clinical activity.

AXIS	EXAMPLE	OPPOSITE EXAMPLE
WELCOME	Welcoming	Cold or frosty
The extent to which a participant felt welcome	<i>Eliza: [describing the environment] welcoming, friendly and expected. Like they were expecting me.</i>	<i>Dominic: I showed up to this clinic and she was quite frosty.</i>
STRUCTURING ACTIVITY	Organised/ Efficient	Chaotic
The sense of how activity was structured within the environment.	<i>Wendy: My other word was like organised. Because everyone seemed to have a role...Everyone fit in.</i>	<i>Eve: There's a lot of staff on the ward, and like everyone's changing over, it's quite chaotic and you don't really know where to go or like what you should be doing until everything settled a little bit.</i>
INTENSITY	Calm	Intense/Busy
The sense of energy within an environment.	<i>Liam: Its quite routine...they've got a plan for everything is quite regimented and there is just a lot of paperwork so it is a much calmer environment.</i>	<i>Simon: I quite enjoy the intensity of it. And erm that kind of challenge. With all the hustle and bustle and a large number of patients, lots of people moving around.</i>
AFFABILITY	Friendly/Nice	Serious
The sense of sociability or approachability within the environment.	<i>Caroline: It's quite nice, and everyone is like really friendly... the whole clinic is just like painted in really nice colours, and I feel like it's just like a really nice environment to be in.</i>	<i>Colin: The words I picked were 'serious', [during] the handover between the night shift and the morning shift and they were all going on about how it was one of the worst night shifts they've ever had... it's really serious'.</i>

Table 12: Example of workplace climates

7.7.3 Student and staff-student dynamics

A significant dimension of clinical context is the characteristics of the students present and how they interact with other staff groups. This is in part dependent on curriculum design and placement organisation (General Medical Council, 2018a, Kraakevik et al., 2021). In this investigation, students could be present in clinical

areas alone, with other members of their year group, with members of alternative year groups, with students from another medical school or with students from other health professional backgrounds.

The impact of other students was dependent on the context and the behaviour of the students in question. Other students, including from different professional backgrounds, could also be important sources of emotional and navigational support.

Duncan: The student nurses that I've seen on the ward have been really helpful like pointing me to where to find things.

Eliza: I think it depends on like erm the other medical students, but you like usually it's good because you sort of like support each-other, you can discuss things a bit more.

However, tensions could occur where space or resources were limited which could lead to competition. Indeed, competition between peers is an established phenomenon in the peer-assisted learning literature (Masters et al., 2013, Almairi et al., 2021, Zgheib et al., 2020, Bennett et al., 2015). In this study, student rivalry was particularly problematic where students were perceived to be domineering. In other instances, 'turn-taking' and deliberate efforts to distribute opportunities minimised this issue.

Duncan: We often find that sometimes two of us get in the way.

*Eve: For us in GP in 3rd year, there was **four** of us and there was just the **one** room...And it was a **very** crowded space.*

Duncan: There is competition on the ward. Like, if you can see the patient first, sort of you know, who's going to do what.

*Eliza: There's a **few** students who sort of like want to take everything as theirs.*

Georgina: There's got to be a bit of give and take. Like if someone needs something signing off then you let them have that or like if you particularly need something you ask if you can do it. Like it works really well.

Indeed, the participants readily made judgements about the behaviour of their peers, where certain behaviour was considered out of the bounds of social norms (see

Section 5.8.4). In some ways this parallels the concept of ‘professionalism’ literature, which describes the negotiable boundaries for expected medical student behaviour (Goddard and Brockbank, 2023).

Another important dynamic was how staff interacted with the student body in general and over time. There was a perception that some staff members favoured students according to their professional background, for example obstetric staff favouring midwifery students. The students also felt that staff developed an impression or understanding of the student body as a whole based on earlier experiences which could lead to negative bias, or conversely a greater ability to meet student needs.

Eliza: It's very difficult because they do give midwife midwifery students priority.

Duncan: I've had the opposite as well. Where like student nurses have been in clinic and they wanna sit in with the doctor and the doctor said, 'no because I've already got a medical student with me.'

Dominic: You also have to be the one to ask questions and show that you're engaged in order... because I think erm, the consultants and probably get like quite a lot of like student fatigue, where they're used to like students just looking bored.

Fraser: It also helps not being the first round of students.

Furthermore, the students developed an impression of the staff body as a whole in clinical environments, which was significant in determining their engagement with learning opportunities. A key consideration was whether staff were ‘nice’ or the opposite of this, which was a source of anxiety or reassurance for students in approaching novel situations. Indeed, the literature highlights that students are very receptive to the ‘friendliness’ of staff (van der Zwet et al., 2010, Hagg-Martinell et al., 2017). The students’ were also quick to evaluate the ‘busyness’ of staff members which was generally negatively perceived, as echoed in the literature (Shahi et al., 2015, Lyon, 2003, Liu and Sullivan, 2021, van der Hem-Stokroos et al., 2003, Delva et al., 2004). Finally, another important related characteristic was how accommodating or receptive staff may be to having students. This parallels with the importance highlighted by students on clinical cultures which favour teaching and

learning (Liu and Li, 2023, Shahi et al., 2015, Gallagher et al., 2012, Thomson et al., 2014, Berkhout et al., 2017b, Lucas and Pearson, 2005).

Duncan: It very much depends who's there on the day, what person they are, whether they like teaching, whether they want students on that day, at that time.

*Eve: [I was] a little bit nervous because I wasn't sure who the staff would be. And it's like sometimes they're really nice. I mean, they're **mostly** really nice, but sometimes [shrugs] I just get bit nervous.*

Dominic: Yeah, it's so dependent on who's there and how willing they are to kind of have students around for sure.

Mhairi: One of the consultants, clearly, I don't think he wanted the students to be there.

7.7.4 Clinical activity, workload and patient dynamics

The nature of clinical work in different environments varies according to the needs of the patients being cared for (NICE, 2018, NICE, 2012). This clinical 'activity' is an important contextual influence which has already been captured in the sections relating to how students perceive delivery of care (chaotic versus organised, intense versus calm) and staff busyness. The literature also suggests that patient 'census' (that is the number of patients and their health and social characteristics) greatly influences student experiences (Dolmans et al., 2002, Hoffman and Donaldson, 2004, van der Zwet et al., 2011, van der Zwet et al., 2010, Steven et al., 2014, Reid et al., 2014). However, surprisingly, despite this and the centrality of patients to clinical care and medical education (General Medical Council, 2009, Spencer et al., 2000, Howe, 2007, Dodsworth et al., 2022), the participants made limited reference to the nature of the patient body as a contextual influence.

In terms of patient numbers, having less patients present was considered advantageous by some students as staff had more time for them. However, the students also valued their own interactions with patients, drawing significance from the 'numbers seen' as well as patient acuity.

Hugh: Getting to see a lot patients post-op... It was really interesting yeah.

Colin: It felt very much like I was being thrown in the deep end... trying to take bloods off people and seeing people who were actually acutely very unwell, and what I was doing had an influence on that?

Considering the latter, being involved in acutely unwell patients in emergency and critical care almost held morbid interest for some students. However, this patient group was also perceived as less accessible to the students and accordingly impacted on their engagement.

*Susan: I was on critical care...everything's like **quite time critical**... So it was difficult to know what can I actually do in that setting.*

Liam: And you sort of feel like you don't know where you can and can't sort of intervene or ask in critical care and ED [emergency department] because you know there's, it's a bit more intensive and there's a lot going on.

Colin: For me, my, the words I picked were 'serious', 'busy' but, and 'exciting'. Erm, because when I first came in, it was the, the handover between the night shift and the morning shift and they were all going on about how it was one of the worst night shifts they've ever had.

In some cases, perceived differential staff treatment according to clinical area compounded student disengagement.

Wendy: I went onto critical care for a morning. And at the beginning, there seemed to be a bit of an attitude of, [said in unkind tone] 'don't really know why you're here?' And they didn't really want me to see any patients.

Indeed, the challenge posed to students by certain specialist or critical environments has already been described (see Chapter 2) (Baecher-Lind et al., 2015, Cotter et al., 2016, Johnson et al., 2019, Boor et al., 2008, Kappy et al., 2019).

7.7.5 Conclusion

The workplace conditions relating to the delivery of clinical care are a significant contextual influence governing how students approach and experience different clinical contexts. The student perception of the 'climate' of different environments is constructed from specific dimensions from which the 'atmosphere' of environments is understood. The overall impression of 'climates' is also governed by the dynamics of

the staff and student body within environments and how these interact. Pertinent points include the number and characteristics of students present on clinical placement and relationships with staff. Finally, the nature of clinical care being provided to patients influences student behaviour in different contexts according to patient numbers and acuity.

7.8 Outside the clinical context – student lives, the university and placement evaluation

7.8.1 Introduction

In addition to how clinical environments are experienced by students, pertinent to making sense of students' engagement with opportunities is developing an understanding of how clinical experiences are shaped by the wider context of learning which influences but operates outside of this dimension. Firstly, the experience of students in their home and work contexts is perhaps the most significant outside influence over their placement encounters, though this generally falls outside the scope of this investigation. Another element which again is not examined directly by this study is the curricula dimensions of the medical programme the students are enrolled in. This will be explored solely from the vantage point of the student in relation to their perception of the 'medical school' and pertinent aspects of the organisation and delivery of programmes of learning.

7.8.2 Student context

The personal lives of participants represent a highly significant context for their learning whilst on clinical placement, with the literature emphasising the significance of home circumstances such as living arrangements, financial circumstances and relationship statuses (Picton, 2021, Lumley et al., 2015, Krstic et al., 2021, Gaufberg et al., 2010, Dyrbye et al., 2005). For ethical reasons, this investigation was designed not to probe into participants' private circumstances, particularly in the context of a group discussion. Nevertheless, the participants volunteered some information which affirms the relevance of this dimension to the study aims which will be briefly described.

Firstly, living with other medical students was considered advantageous through providing an opportunity for peer learning as well as social support particularly in the advent of the pandemic.

Gary: We're quite fortunate in our house living with other students... because we've had less clinical time. If, for example, I lived on my own or without other medical students, I would find it really hard in terms of revising or practising MOSLER style stuff for exams. Because we all live together and we're on the same placement. We can really help each other out.

Interestingly, this finding appears counter to the work of Zaidi et al who suggest that students find studying with close friends a distraction to learning (Zaidi et al., 2012). However, the role of friendships in supporting positive interactions in clinical environments is well recognised (Lu and Kumar, 2023, Berkhout et al., 2017a, Kennedy et al., 2020), with Bransen et al highlighting the importance of students' personal networks in providing social support (Bransen et al., 2022). The role of peer-assisted learning is described in detail in Section 2.9.

Secondly, building upon the relevance of 'hobbies' as described in Chapter 5, the need to engage in part time employment was an additional pressure particularly if timetables were not available. Indeed, the experience of financial pressure is identified in the research as impactful on the experience of study (Moreau and Leathwood, 2006, Nicklin et al., 2018, Ross et al., 2006).

Georgina: It's also really, really frustrating if they don't give you a timetable in advance. ...it's almost like sometimes they forget we've got lives outside of just studies, like we might have a part time job we might have like whatever else on...It just adds more stress with it.

Finally, the students referred to how their physical and psychological status provided a significant backdrop for navigating different contexts, particularly in the context of rapid rotation between departments.

*Duncan: As medical students we move around a lot... and you almost get **fatigued** from having to introduce myself and like, erm like prove yourself almost to new departments.*

Eliza: Yeah, I think in third year, especially like when your confidence isn't that good. You sort of like, you have to proper psych yourself up like.

The importance of a student's mental and physical health and emotional state are also well established determinants of their ability to engage with learning opportunities as discussed in Chapter 5 and according to the literature (Simpson et al., 2019, Ishak et al., 2013, Todres et al., 2012, Bombeke et al., 2010, Dyrbye et al., 2009, Taylor et al., 2019).

7.8.3 The university context

The relevance of how medical programmes are structured and how this influences student learning is well studied by curriculum designers (Grant, 2019). From the student perspective, the participants were firmly rooted in the 'university context,' strongly self-identifying as 'learners' in the clinical environment and perceiving the university or 'medical school' as a powerful entity responsible for shaping their experiences. Some participants viewed staff members principally as employees as the university paid to teach them. The students were also liberal in their criticism of perceived poor university practices.

*Fay: I know it's in their job description? To **teach** us? But I just feel like I get in the way...I walk in and I don't know **who** is paid to teach me and who is not.*

Georgina: Yeah, all of the problems haven't been staff and stuff. It's been organisational stuff from the uni, or I guess the trust at a higher level than just the people who organize our timetables.

Eliza: All of the problems that we've had have originated from the university rather than, like the hospital staff.

*Gary: The uni hasn't been as good as it **could** have been in it's organisation... on the one hand they wanna treat us like **staff**.... But on the other hand they **don't**.*

This external locus of control in some instances could encourage disengagement practices, where the responsibility for learning was perceived as falling on others.

Lucas et al's work highlights student frustration with staff not living up to their duties when they are 'paid to teach' (Lucas and Pearson, 2005). Indeed, this perspective of learners as 'service-users' is recognised in the literature as a shift in student culture attributed in part to rising fees and a focus on 'feedback' (Khan and Hemsley-Brown, 2021, Nixon et al., 2016, Tomlinson, 2016). Moreover, a particular bone of contention for the students was the concept of 'self-directed learning' where the students felt the medical school was responsible for providing explicit guidance on what they should engage with on placement, something echoed in the medical literature (Lucas and Pearson, 2005).

Wendy: If at the beginning of the day or consultant says to you like, 'what do you want to get out [of] today?' If, we don't really have that much guidance on that sort of thing.

Fay: If we were given better structure on what we should try and achieve in a day.

Gary: Telling what they expect from you from day one is really useful.

Fraser: The days where you have a full day of self-directed learning and we're told you were expected to be on the wards for that full day... It's quite a long time to fill without any specific goal in mind.

A lack of external direction appeared to be used by some students to explain why they disengaged with opportunities.

Finally, the students were particularly mindful of correction from the university with regards standards for appropriate behaviour. The participants felt very vulnerable to correction, and although they were resistant to reminders addressing behavioural standards, these were still highly influential in guiding their behaviour whilst on placement.

Gary: With all of these little things to make sure you don't get in trouble. 'Cause I do feel like it's almost like, all the emails we get are kind of, sometimes they're a little bit patronizing...like you don't want to step a toe out of line 'cause, it's just not worth it.

Georgina: One of the doctors like in a friendly way stopped us and were like, 'oh, by the way, if you go into the canteen like that, you're going to get

*really told off'. And I've got no proof of this, but I strongly suspect if that had been a group of **not** students he wouldn't have felt the need to stop and say that I just. It's just little things that make you feel a bit like you're walking on your tip toes.*

The subject of 'professionalism' is a significant area of study within medical education (General Medical Council, 2024a, O'Sullivan et al., 2012, Brennan et al., 2020, Birden et al., 2014). Although there is no consensus on the definition of the latter, this concept encapsulates the processes and procedures through which appropriate standards of behaviour are perceived and managed within educational, clinical and personal settings (General Medical Council, 2024a, Birden et al., 2014, Birden and Usherwood, 2013, Brennan et al., 2020). Of relevance to this investigation is the growing recognition that the pressure to maintain high standards of 'professionalism' can be an additional source of stress for students moving between contexts which can exacerbate self-identity conflict and may ultimately contribute towards burnout in the profession (The Lancet, 2021, Maitra et al., 2021, Salinas-Miranda et al., 2014, Finn et al., 2010).

7.8.4 Personal and peer placement expectations

At the intersection between the individual and the university context is how an individual makes sense of the experience of clinical placements in the context of their own and others' experiences of clinical placements. Indeed, there appeared to be a continuous process of sense-making and expectation setting through comparing placement experiences according to specialism, locations or stage of training. Previously unfavourable experiences could bias participants against subsequent experiences. Conversely, students readily disengaged from placements if these were not thought to live up to previous standards.

*Dominic: In fourth year...there'd be a clinic on and the consultant in charge was very much like, 'Right! You're a medical student, go take all the histories and examine!... and it was such a useful way of learning and I compared that to **this** year... and I was just **sat** there*

*Liam: During EOCP [first 3rd year placement] some of the consultants came in, **did** have a more interrogation style. And it can work. And I'm personally a fan of that style, but I do think especially at the start of MACS*

*[second 3rd year placement] it was, it was nicer to have that encouragement and not be sort of **knocked** immediately.*

Georgina: 'Cause like if I compare like what we're doing at the minute, like for example in third year they put us on like a 'Base Ward', so we were allowed to move around. But for any self-directed learning time that was like our base.

Dominic: We never actually got, had like a hospital induction? So, like in 3rd year we kind of got shown round the bits and pieces we needed.

Furthermore, sharing experiences with peers also served as a lens through which current contexts were understood and evaluated through a process of ratings and reviews. The participants felt particularly challenged where they felt they were 'missing out' compared to their contemporaries in different sites. On the other hand, a consensus of a placement being 'good' could lead to a 'halo effect' in how students perceived experiences and reacted to opportunities.

Fay: What we do is different.... they were seeing patients during [first third year placement] which I understand we weren't. But I feel like we missed a bit, a chunk of time not being able to do that?...it would just be nice if there was more... Evenness between the base units, I think.

Georgina: And I've not got a bad word to say about either of them [hospital sites]. They've been like, from a pastoral perspective, from a teaching perspective, from everything they've just been so good.

*Eliza: I've found that [names current district] is a lot, lot more support, like supportive. Just in general, like even all of the staff on the Ward are like so much more supportive and wanting to teach you **than the other base units** in general, is my personal experience.*

7.8.5 Conclusion

This section describes a number of important inter-linking contextual features from non-clinical environments which influence students' attitude and behaviour.

Unsurprisingly, medical students' personal lives impact on their experience of study, for example the role of external commitments and the impact of student wellbeing. Considering the 'university' context, the participants identify themselves primarily as

'learners' and view the 'medical school' as a powerful entity but one which they feel able to critique and evaluate as service users. This vantage point was seen to shape engagement practices. Finally, the participants are constantly engaged in a process of comparison relating to the prior and current experiences of themselves and their peers which shaped their perspective and behaviour. These features and their association are summarised in Figure 32 below.

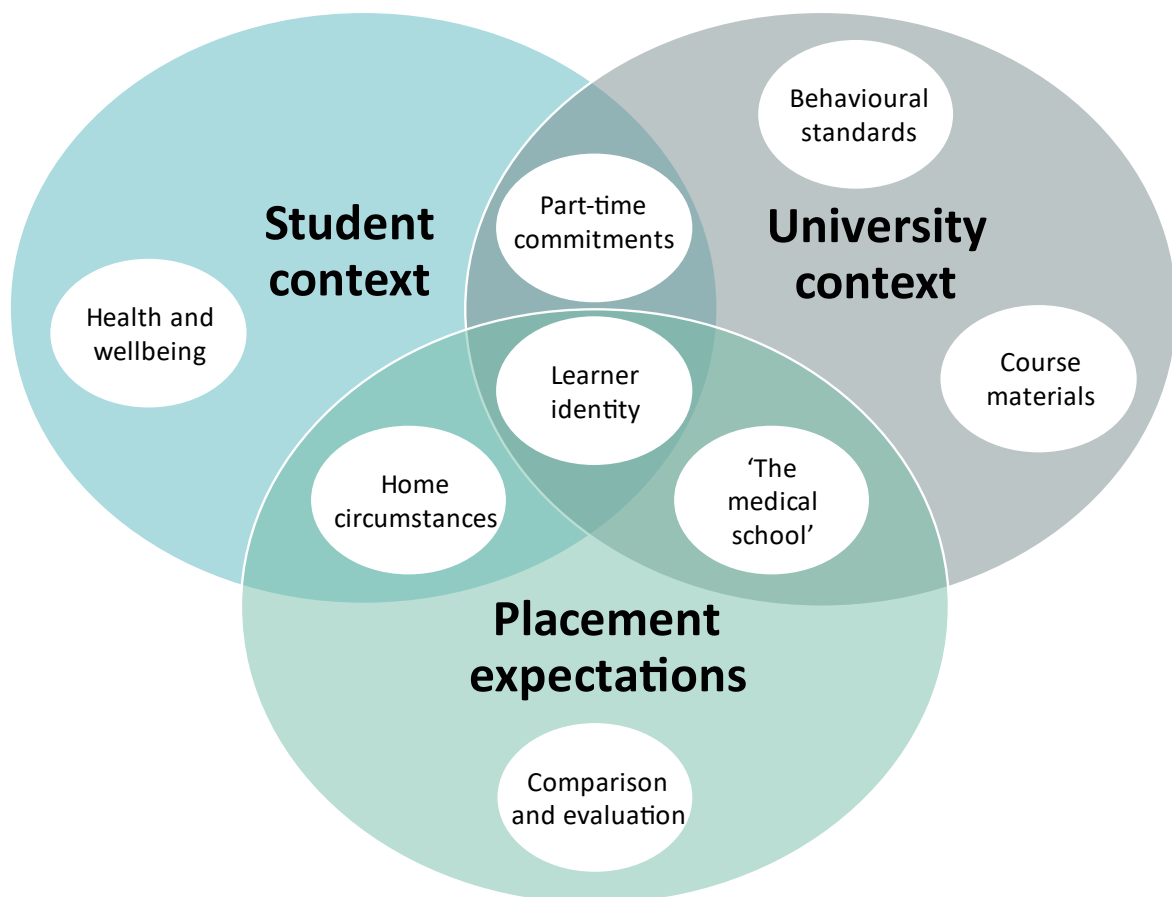


Figure 32: Mapping external factors

Figure 32 Legend: The large circles represent the major external factors influencing medical student engagement with learning opportunities on clinical placements. The white circles represent the sub-categories. Their position in the circles demonstrate where these factors overlap.

7.9 Conclusion

Students' early encounters upon entering a clinical environment represent an important time frame for experiencing important contextual influences which subsequently determine engagement with learning opportunities. Two useful

paradigms for conceptualising students' experiences are the extent to which they are 'orientated' to the clinical environment and their degree of connectivity within clinical activity. Physical, social and emotional factors were influential in shaping how these dimensions were characterised. A sense of orientation and connection to environments was promoted by favourable structural determinants, for example through the provision of designated space for students. Relational support by staff and peers was also highly influential, with the anchoring effect of having a 'contact point' a prominent influence. Students could also be supported to manage their early interactions effectively through orientation and induction processes and through promoting learning from recurrent experiences. Manifestations of inadequate connection and incorporation into clinical areas included the 'invisible' student, also perceived as the 'spare part,' and the 'intruder' student whose disconnection is particularly characterised by being passed from pillar to post. Promoting staff awareness of the patterns of student physical positioning which are associated with disengagement may ultimately be one strategy in optimising students' early experiences entering new environments as a pivotal time frame.

7.10 Link to next Chapter

The next Chapter 8 is a reflexive examination of the emerging conceptual model from both the interview part of the study and this phase of focus groups. A cross-cohort analysis across all the phases is presented in Chapter 9.

8. Chapter 8 - Phase D Member Reflexive Focus Groups

8.1 Introduction

This chapter presents the methods and findings for the fourth phase of the investigation involving member-reflexive focus groups. The data collection processes will be elaborated from the methodological outline provided in the Chapter 3. The sampling process and characteristics of the sample will be described in detail. Finally, the findings for this phase of the study and processes of analysis will be presented according to the objective for this phase of the study. The findings in this phase are also cross referenced in Chapter 9 in the over-arching conceptual model.

8.2 Methods

8.2.1 Revisiting objectives

This phase of the study was designed to answer the study research question in relation to the following research objective:

- Objective Five: To establish the inter-related processes common to medical students' decision making in relation to engagement with learning opportunities, paying attention to individual motivation, emotion, peer influences, workplace features and curricula influences.

The purpose was to engage in a process of member-reflections to enrich the conceptual model through providing an opportunity for dialogue in relation to the emerging framework (Tracy, 2010, Olmos-Vega et al., 2022). It was anticipated that the focus groups would facilitate co-construction of novel findings as well as strengthen and develop connections across the previous phases of the study. Additionally, this phase of the study was intended to support the process of rigour and trustworthiness by engaging in a reflexive process of understanding the emerging findings from the perspective of the social group to which they apply (Morse, 2018, Tracy, 2010, Olmos-Vega et al., 2022). A group setting was chosen to further explore the model to facilitate its examination from the perspective of the social context the findings apply to.

8.2.2 Data collection – focus groups

The focus groups were conducted remotely by videoconference using Microsoft Teams and facilitated solely by the principal investigator. The focus group discussion followed a pre-prepared process of presenting the emerging model in stages using PowerPoint and was designed to take one hour in total (See Appendices L and M). Member reflections were encouraged through group discussion using the conceptual maps as a focus. This process was consistent with the established method of 'diagrammatic elicitation' which is gaining favour as an effective approach for flexibly facilitating member reflections (Sahakyan, 2023).

The conduct of the online focus groups followed the best practices developed through engaging reflexively with participants using a post-participant survey and the available literature (Lobe, 2017, Fox, 2007, Archibald et al., 2019). These processes are described in more detail in Appendix C and were subject to a peer-reviewed journal article published during the course of this (Osborne et al., 2023). Two focus groups were undertaken with a cohort of students in Year 5. Year 5 students were selected as they would have the benefit of reflecting across the programme of their study. Focus groups were sized at 4-6 students per group, as per the optimal group size for videoconference focus groups (Lobe, 2017, Osborne et al., 2023). Video data of the focus groups was collected for the purposes of transcribing the audio component of the focus groups. Analysis was not conducted of the video footage as this fell outside the remit of the study and there were ethical concerns raised about the necessity of utilising this data.

8.2.3 Recruitment, sampling and consent

Rationale

Focus groups were homogenous with recruitment based on students in the same year of medical study, in order to capitalise on existing peer-to-peer relationships. The sample was formed from Year 5 students from the same cohort of students participating in the focus groups in the preceding Phase C (Final Year Students). However, it did not include individuals who had already participated in data collection. Although it is the norm for member reflections to include existing participants (Tracy, 2010), a comparable but fresh sample of students were recruited

as relevant stakeholders in order to minimise participant burden and encourage the participants to focus on the emerging model as a whole, across the phases of the study (Olmos-Vega et al., 2022). Students were sampled three months prior to the end of their programme of study, enabling them to have sufficient oversight whilst avoiding impinging on the final assessment period as per the study ethics.

Inclusion and exclusion Criteria

Inclusion criteria

Participants had to meet the inclusion criteria and none of the exclusion criteria to be considered a participant in the study.

- Stage of training: Medical students at Year 5 of training of the MBBS programme at Newcastle University in September 2020
- Place of training: Medical student assigned to Northumbria Healthcare NHS Trust as their 'base-site' for Year 5 placements in January 2021

Exclusion criteria

- Refusal of consent
- Students allocated to the principal investigator as supervisees
- Students with whom the principal investigator considered they had a personal relationship with

Sampling strategy

Half of a Year 5 student cohort were invited to participate during their final clinical placement of their final year of study (see Figure 33). Numbers were sufficient to form two focus groups which addressed the study objectives through rich dialogue, negating the need for further recruitment.

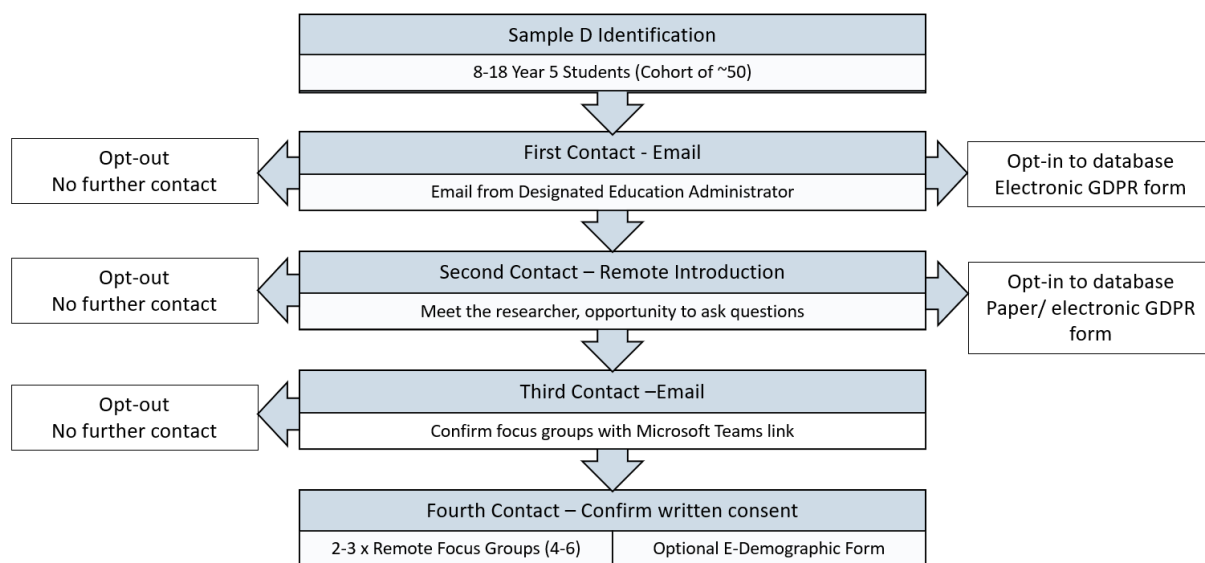


Figure 33: Year 5 sampling overview for remote focus groups

Consent process

A minimum of 72 hours cooling off period was ensured between the students receiving information about the study and the focus groups being scheduled. A verbal and written consent process took place at the information meetings which provided an opportunity for students to ask questions. Verbal consent was confirmed immediately prior to participation in the focus groups. No more than 12 weeks elapsed between provision of written consent and focus groups taking place.

8.2.4 Data analysis strategy

Analysis of the focus group transcripts followed an inductive process on a line by line basis (see Chapter 3) (Charmaz, 2006). In contrast to the earlier phases of the study, coding was focused on novel elements, novel connections and elements pertinent to the member-reflexive process. According to the latter, this included examination of descriptions which affirmed the model, contradicted the model, or suggested it was meaningful or relevant to the participants. One of the 2 transcripts was independently separately coded by the first PhD supervisor in order to facilitate a reflexive conversation about the analysis process and support rigour (Morse, 2018).

8.3 Results – The Sample

8.3.1 Sample development, characteristics, and purposive sampling

Students were selected to give a representative sample of the overall cohort.

Twenty-three Year 5 students were approached, with 13 initially responding and 10 ultimately participating, forming Sample D (44% response rate). This sample was represented in two focus groups; one with 4 students, one with 6 students.

The average duration of the recorded focus group component was 52 minutes and 39 seconds with a range of 51 minutes 51 seconds to 53 minutes 26 seconds. All participants engaged for the duration of the member reflexive process and contributed to the discussion. All participants provided demographic data (Table 13).

Demographic Data of Sample D

Measure	Category and Participant number			
Age	18-24	25-29	30-34	35-39
	7	1	2	0
Gender	Male	Female		Other
	7	3		0
Graduate status	Undergraduate		Graduate	
	7		3	
International student	International/EU Student		Non-International/EU Student	
	0		10	
Widening access status	Widening Access Student		Non-Widening Access Student	
	2		8	
Ethnicity	White	Mixed/Multiple	Asian	Black
	9	0	1	0

Table 13: Sample D Demographic characteristics

8.4 Results and Discussion – The Findings

8.4.1 Introduction

This section presents the findings of the member-reflexive process. Firstly, the extent to which the participants resonated with the overall model and the emerging themes will be explored. Secondly, an outline will be provided regarding how conceptual development was furthered by the focus groups. This will include a description of a

sample of individual elements which were advanced and enriched. Finally, elements considered entirely 'novel' elicited through the focus groups will be described including an explanation of how the final conceptual model was expanded to accommodate these.

8.4.2 Resonance and affirmation with the model

Overall Resonance

Consistent with the social constructivist stance of this thesis, the process of the member-reflexive focus groups was not to seek participant agreement with a universal 'truth' (Bunniss and Kelly, 2010, Cutcliffe and McKenna, 2002). Rather, the dialogue was seen as an opportunity to co-construct theory (Tracy, 2010, Olmos-Vega et al., 2022). Nevertheless, one element of the process was to seek affirmation of the emerging model (Bloor, 2001). Tracy considers this to be fulfilled where the participants consider the findings both understandable and meaningful (Tracy, 2010). The participants' responses suggested that they resonated with the overall conceptual mode and indeed were able to recognise their own decision-making cognitions represented in the map of decision-making processes.

Mavis: It's funny seeing them all mapped out because like I do think most of these are like all drivers for most decisions I make on the ward on a day-to-day basis. Even if I'm kind of like, not consciously aware of them.

Oscar: The majority of them make sense and I'd agree with and it's not until you map it out and actually look at how much they sort of interconnect and how much they play off of each other, how they actually do all link together and sort of form your decision... It's quite interesting to sort of look at it all mapped out, it's cool.

Furthermore, Angen describes another manifestation of model affirmation in what they describe as 'Aha moments' (Angen, 2000). These are described as immediate feelings of authenticity with the findings, examples of which again were provided by participants.

Nigel: Feels like someone's put like a, shone a light into my soul!

*Rory: You've mapped out all the factors **really** well.*

Affirming key themes

In addition to resonating with the overall model, the students expressed their resonance with the key conceptual areas developed in the preceding focus group and interview data. These are summarised in Figure 34 below.

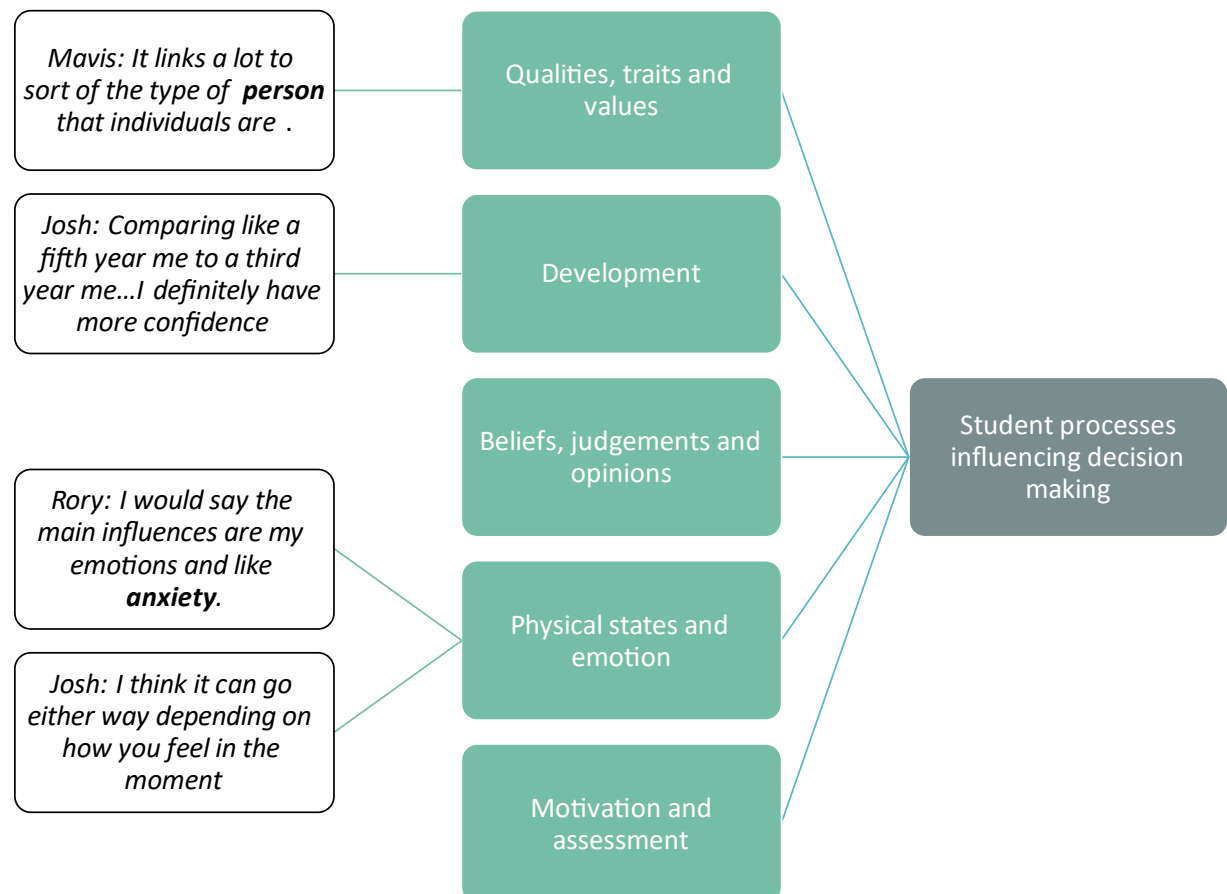


Figure 34: Example quotes affirming key themes

With respect to the inter-related processes underlying student engagement with opportunity, the students recognised the importance of student 'traits' and elements of decision-making being personal to them. Other elements pertinent to the students included the role of emotion, and student development over time. Additionally, the participants recognised the role and influence of different experiences feeding into the model of engagement, with both short term and long-term effects. As was the focus in Chapter 7, the students' recognised the importance of the context of workplace environments on their decision to engage. With respect to patterns of behaviour, the students resonated with the terminology used to conceptualise

student activity described in Chapter 4. In particular, the concepts of ‘contributing’ and ‘helping’ were prominent.

*Mavis: I would rather be doing something that is like **contributing** to the patient’s care*

*Nigel: You want to be able to **help**. And that kind of being able to do a task on the ward that you can concretely say has **helped**.*

They also resonated with the concept of learning opportunities being socially constructed and shaped by the environment they are in, though this was also a challenging construct to grapple with beyond the practical elements.

*Edward: Learning opportunities are created and shaped by students as individuals. **Yes**, we **can** make our own learning opportunities, but you can **only** do it with what you given in front of you. And if there's no material to make a learning opportunity then you're a bit **stuck**.*

*Alan: Suppose it probably would come under more social, but the culture of that team at that specific moment in **making** the opportunities for people?*

With respect to contextual influences, upon entering a new environment the prominence of prior expectations influenced by peers was affirmed.

*Cheryl: I’d heard from like **four** different people, ‘there’s nothing to do and you’ll go home at lunchtime’. And they did send me home at 11. But like you kind of go in the mindset, like I’d had things **planned** for the afternoon...which is really bad! But like because so many people repeatedly tell you, you kind of then are **biased** towards it before we’ve even turn up? On the day? Which is quite then difficult to get out of that mindset.*

8.4.3 Developing individual aspects

Introduction

The participants elaborated on specific aspects of the model which enriched the understanding of minor concepts. This was through provision of further specific detail, ‘thick’ descriptions’ or explicitly outlining concepts co-constructed from multiple

narratives (Tracy, 2010). For brevity, only the elements which particularly enriched the overall conceptual model are described in this section.

Patient influences

As previously described in Chapter 5, the students were circumspect about the influences patients had on their decision-making, focusing on patients' health problems rather than their social influence as individuals. In the member-reflexive focus groups, the participants gave more consideration to how their actions might benefit or harm patients, and how that impacted on their engagement with opportunities.

*Mavis: If it goes **wrong**, you're thinking, 'Oh well, actually I'm doing it for a reason. I'm doing it to help the patient'. Whereas I think if it was something where you didn't do a very good job of it and it was just for your own learning, then you're kind of like, 'Well, I've just wasted the patients time. I've wasted **my** time.' Like it hasn't really benefited anybody.*

In particular, the students were conscious of the pain experienced by patients through clinical procedures, which fed into their reflections on their own ability to perform.

Josh: My confidence's been knocked a bit too much that it's affecting my, erm my skill at it. And I just don't wanna like put another patient through pain or whatever.

Oscar: Cannulas are just an example, but it's a good example, is that the fact that there's like a human being on the other end of you practicing? Which sort of, especially for me, definitely affects my choice.

One participant explained how the dynamic with patients changed over time, where they felt their interactions were more for the benefit of patients as they were able to function more independently.

*Mavis: I think in third year a lot of the things that we did on the ward really just felt like it was just for our own learning. There was no benefit to the patient **at all** just because of the jobs we were asked to do and the responsibilities we had. So like, if the patient sort of seemed **tired** or didn't really want to see anybody, there was no way I was going to go and sit and*

ask them about their life for half an hour...But the jobs that I'm doing in fifth year and the things I'm being asked to take responsibility for in fifth year they are beneficial to the patient as well?

This enriches the previous descriptions in Sections 5.7.4 and 5.8.5 which touch upon the student concern for patient welfare and wanting to act in their best interests.

Staff interactions

In terms of interactions with staff, Section 6.5.2 describes the reciprocal relationship between students and staff members. At times, the nature of the engagement appeared to be the provision of support (either educational or service-based) with the understanding or hope of a reward in return. One participant was explicit about this dynamic and explained that they would engage in tasks to support the workload of staff members if they felt they had been the recipient of a positive educational experience.

Josh: If I've had like good teaching from some people on the ward? And then they are busy with something else and have like a couple of tasks. I feel like I can kind of like not, not pay them back in that way, but kind of help out with like by doing a cannula that like needs to be done.

This strengthens the concept that there are social contracts between staff and students and that educational provision is a form of currency from the students' perspective.

Presenteeism and 'tick-box' mentalities

Furthermore, another dynamic of viewing opportunities was that the students considered there to be targets or thresholds for particular experiences. One participant was particularly explicit about this 'tick-box' mentality which could lead to disengagement with opportunities if the student felt their requirements had already been fulfilled.

*Cheryl: About the **logbook**, like I think they really do kind of shape... well, what you choose to do on placement and I think it's a good thing in terms of you have like set things that you need to achieve, but also then like I think it like is constantly in the back of your mind? So say you've done your*

cannulas, you'd be like, 'right well, I've not done **that**, so I should probably do that **instead**. If that opportunity comes up.'

Mavis: I think like in 3rd year if I had a competency signed off I would be like, 'Oh well, I've done it now. Like that box is ticked, I don't need to do another cannula', or whatever it was.

Edward: It's like, 'oh well I need to do that for me log book.' So then kind of without wanting to **miss** that opportunity you then **leave** the really good teaching that you've had, so you can just get it signed off? I don't know. Sometimes I feel like the logbook's got **positive** things 'cause it drives you to get it done, but also negative things 'cause it, you feel like you **have** to do it?

This concept also relates to the concept of students being highly selective in what they choose to engage with. Related to this was the concept of 'presenteeism' where at times students felt their role or objective was simply being present in environments (see Section 6.3.3).

Josh: I feel like I'm just there like kind of... **being present**?

External influences of decision-making

The participants also went further to explain how their personal circumstances, external commitments and financial situation were highly significant in influencing how they perceived opportunities during clinical placements and their patterns of behaviour.

Daniel: The part time work one was a huge one. Erm, I mean I've stopped working now but I mean I worked right away through uni...then I'll be sitting there thinking, like if I'm just sitting there in the back of the clinic, not doing anything, not gaining anything, is it worth losing an hour's pay at work sometimes.

Serena: **Commuting** for me, I think in third year was a **massive** driver. 'Cause I couldn't **drive** and the commute to [names place] or [names place] was really really **long** by public transport. And that can massively affect when you want to leave and what time you leave by.

Conclusion

The member-reflexive discussion further developed the overall model by enriching the description of sub-elements. Conceptual dimensions that were progressed included the nature of students' individual relationships with patients and the reciprocal 'social contracts' that existed with staff members. Furthermore, the students' approach to opportunities and behaviour was further delineated, with regards to 'thresholds' for particular experiences and the concept of presenteeism. Other individual elements were also developed, but description of each would be exhaustive and beyond the scope of this thesis.

8.4.4 Novel aspects

Introduction

As part of the member reflective process, new themes in relation to the study phenomena were uncovered despite conceptual saturation being broadly achieved after the first two participant-facing phases. The further uncovering of novel material was not unexpected, recognising the limitation and artificial expectations of considering 'saturation' in absolute rather than relative terms (Varpio et al., 2017). Moreover, as described by Bloor, the discovery of new perspectives through member reflections is both expected and advantageous in enriching the analysis and furthering conceptual development (Tracy, 2010, Bloor, 2001). The following section will describe the few but important aspects which were entirely new according to the original conceptual map. These relate to participant demographics, environmental concerns and the role of confidence development through special treatment. The member-reflexive discussions also highlighted new connections between existing elements on the conceptual map. These will not be described as part of this thesis, but provide further evidence of the inter-related nature of the elements portrayed on the conceptual map.

Participant demographics

The relevance of the participant demographics to the investigation and how these were evaluated are described in detail in Section 3.7.4. However, beyond the role of

gender influences, demographic features were not explicitly linked to the study phenomenon until the member reflective focus groups.

Firstly, considering participant age, being a more mature student was considered to be associated with demonstrating greater initiative and proactivity. One explanation for this was a greater understanding of social boundaries and the student role.

Mavis: I think that comes with age as well, though. Like I'm 30 so I'm a bit older than most of the medical students? ... And like younger students. I don't know if it's just because... I don't know. Being older, you've maybe picked up some more life skills that mean you can kind of just throw yourself into those opportunities.

Rory: Being older I think you've got a bit more initiative and a bit more life experience? So you know what you can and can't do and what you should or should not do.

Associated with this was the role of being a graduate versus undergraduate student which was considered another pathway leading to greater maturity. There was also a notion that graduate entry to the medical programme at the investigation site was more competitive, which changed the student outlook on studying, encouraging a more serious approach to studying.

*Mavis: And I think as well with graduate entry, it's very **competitive** to get into. So I think you want to kind of take the opportunity a bit more seriously as well?*

Differences according to maturity and graduate status are also suggested in the literature. Comparative studies suggest that graduate students engage uniquely with clinical placements and may be more likely to complete their studies or outperform undergraduates in assessments, though the latter point is contested (Price and Wright, 2010, Manning and Garrud, 2009, Garrud and McManus, 2018).

Furthermore, with respect to maturity, the literature suggests that mature students are better able to transition into clinical placement, drawing on their prior experiences (Shacklady et al., 2009, Surmon et al., 2016).

A related phenomenon was students' prior experience of working in healthcare and how this improved their initiative in approaching opportunities in the workplace.

Rory: I've got a bit of healthcare experience, so I'm a lot more independent. Erm and I see myself having a lot more initiative... I've been in healthcare for like 10 years so. So I know the hospital quite well.

Indeed, there is a suggestion in the literature that experiences working as a health-care assistant can increase student confidence working in clinical areas (Davison et al., 2022, Davison and Lindqvist, 2020).

Student confidence and promoting 'special' or elevated status

Considering student initiative and proactivity in approaching learning opportunities, a further novel aspect was the role staff members played in deliberately celebrating students or conferring them elevated status. This increased students' likelihood and confidence in approaching opportunities.

Oscar: If they're like really keen and like supporting you and bigging you up to like go and do these skills, then you're much more likely to just be, be game I guess.

Serena: They [nurses] make it sound like, 'oh like you're really special if you can do a cannula. So that sometimes is quite nice as well.

A noteworthy recent piece examining the conceptual understanding of confidence relating to competence recognises that it is subjective, dynamic, and relational according to contextual circumstances (Gottlieb et al., 2022). Furthermore, studies of medical students suggest that confidence is a significant driver of learning and engagement which can develop over time with the appropriate relational and architectural support (Gupta and Howden, 2021, Kjaer et al., 2022, Dornan et al., 2007, Thyness et al., 2022).

Environmental Concerns and Social Responsibility

Finally, a completely novel aspect was a sense of social responsibility in relation to utilising equipment in clinical settings and the environmental implications. This was a particularly pertinent sentiment in relation to the COVID-19 phenomenon, where patient interactions required the increased utilisation of single-use plastic according to the personal protective equipment (PPE) standards mandated by infection control processes.

*Mavis: Just like **using PPE**...I feel like going to see a patient just to speak to them like, it just feels like such a waste of equipment that could be used by somebody else.*

Rory: You're more aware of erm resources you're using now to see patients. I mean, and that does serve as a bit of a deterrent... I think.

*Mavis: And I think as well like, like with opportunities like, if, if, for example someone was like, 'oh just come and practise doing a cannula on me'. Like, a doctor said that, for example. Like, you, I'm conscious of like using equipment? Like when it's not for any **benefit**...that's a very niche motivation for doing things or not doing things...I don't like to waste plastic, basically.*

Although this phenomenon was likely intensified by the COVID-19 pandemic, a hesitance to use up precious resources and concern over the production of waste was seen to factor into students' decision making around engagement or equipment use. Indeed, concern for the climate is increasingly being adopted into medical curricula, including at the study site, and the literature suggests this is a topic of significant interest to the medical student population (Bokekels et al., 2023, Liu et al., 2022).

Conclusion

The conceptual model has been expanded to incorporate novel additional elements arising through the member-reflexive processes. The importance of participant demographics is included in the 'student traits and values' section, adding 'age,' 'graduate status' and 'healthcare experience' to the existing element of 'gender.' The role of relational support in fostering student motivation in relation to task completion is added to the 'motivation' dimension, particularly in relation to where staff members provide students with a sense of elevated or special status. Finally, the dimension of 'environmental concern' is added to the students 'beliefs, judgements and opinions'.

8.4.5 Conclusion – findings

The participants were effusive in describing their affinity with the overall model, which appeared to be both meaningful and comprehensible to them. Prominent themes relating to the underlying inter-related processes of engagement with opportunities

were affirmed. This included elements pertaining to the students as individuals, their patterns of behaviour, the contexts for learning and the role of experience. The focus group discussions also enriched many of the individual sub-elements in the model. A sample of these were explored including those relating to students' patterns of approaching learning opportunities and the dynamics of their relationships. Finally, novel aspects were described. These related to student 'qualities, traits and values', their motivational influences and their beliefs, judgements and opinions.

8.5 Chapter conclusion and link to next Chapter

This phase of the study utilised focus groups with final year medical students to engage in a member-reflexive process. The principal approach was to present the emerging model in picture form and engage the participants in constructive dialogue relating to this. This process is a recognised form of engaging in member-reflexion known as 'diagrammatic elicitation.' The purpose was to enhance rigour and trustworthiness of the conceptual model. Additionally, the development of theory was advanced through this process, with the enriching of individual elements of the model, and the introduction of a few completely novel concepts. The final conceptual model and cross-cohort analysis will be presented in the subsequent chapter.

9. Chapter 9 - Overall Conceptual Model and Discussion

9.1 Introduction

This chapter presents an over-arching conceptual model which draws on the cross-cohort analysis across all the phases of the study. This includes the analysis of the medical students' typical day, the inter-related processes underlying student engagement, student patterns of behaviour during placement and the relevant contextual features influencing student learning. Inherent to the analysis process is how these influences function over time to influence moment by moment experiences. The over-arching model will then be discussed with reference to the relevant medical literature and education theory, with special reference to Billet's theory of workplace affordances (Billet, 2011, Billet, 2001) which is considered the most fitting theoretical model of understanding.

9.2 Methods

9.2.1 Revisiting objectives

This phase of the study was designed to answer the over-arching study aim:

- To develop a conceptual model of the inter-related processes underlying medical students' decisions to engage with learning opportunities during clinical placements.

9.2.2 Data analysis strategy

The cross-cohort analysis was a reflective review of the previous phases of the study. Five over-arching themes were developed through review of the coding and themes of the analysis of the previous phases and written memos. Reflecting the aim of developing a conceptual model, this analysis focused on the development of diagrams which mapped and brought together existing concepts. Early representations of these diagrams were used in the member-reflective process, and this last phase of the study helped shape the nature and character of the final model.

9.2.3 Sample characteristics

Forty-six participants took part overall. The age and graduate status of participants was approximately representative of the overall student body. There were slightly more males represented than females. Sampling included international students and there was good representation of students taking part in a widening access programme. Most participants were of white ethnicity but with some minority groups represented consistent with the overall cohort. The overall demographic data is summarised in Table 14 below.

Overall demographic data

Measure	Category and Participant number			
Age	18-24	25-29	30-34	35-39
	37	5	3	1
Gender	Male	Female	Other	
	26	20	0	
Graduate status	Undergraduate		Graduate	
	38		8	
International student	International/EU Student		Non-International/EU Student	
	3		43	
Widening access status	Widening Access Student		Non-Widening Access Student	
	7		39	
Ethnicity	White	Mixed/Multiple	Asian	Black
	37	3	6	0

Table 14: Overall sample demographic data

9.3 The over-arching conceptual model

9.3.1 Introduction

This section introduces the over-arching conceptual model, building to the final model layer by layer. Firstly, the concept of 'learning opportunities' will be described. Secondly, the influences over decision-making will be mapped according to their influence over time and how they are situated according to the categories of 'environmental,' 'individual' and 'social' influences. Thirdly, illustrative examples will be provided which map decision-making on to the model. Finally, the conceptual

model will be discussed in relation to Billet's theory of workplace affordances (Billet, 2011, Billet, 2001) and other relevant medical theory.

9.3.2 Learning opportunities

Consistent with the philosophy of social constructivism, this thesis adopts the stance that learning opportunities are constructed from the perspective of the individual (Bunniss and Kelly, 2010). Therefore, there are multiple realities of how opportunities may be characterised, rather than one objective truth. Moreover, this thesis takes the perspective that learning is the process of being changed or developed through experiences. Inherent to the nature of the study phenomenon, learning is not limited to cognitive experiences and includes the action on behalf of the individual in relation to their experienced reality.

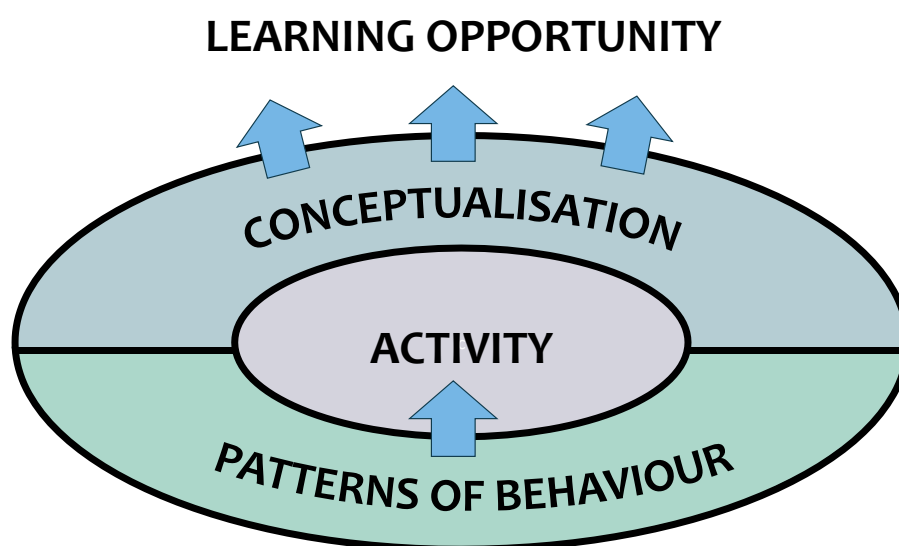


Figure 35: Conceptualising learning opportunities

Figure 35 Legend: This is a diagrammatic representation of how learning opportunities are conceptualised in this study. At the core is the activity and how the student engages with it. This is partly dependent on student patterns of behaviour. How the learning opportunity is perceived following this activity will depend on how that is conceptualised.

Figure 35 captures how learning opportunities are shaped according to the clinical activity around the student, their behaviour in relation to the activity and how that activity is conceptualised. In this way, learning opportunities are conceived as dynamic, modified by individual action and co-constructed. The nature of a typical student day and the activities are understood through the work in the Phase B part of

the study, particularly through the analysis of the modified day-reconstruction questionnaire. How students perceive opportunities and the nature of their action in relation to this is explored in Chapter 4. The use of language is considered critically important as a way of conveying this conceptualisation. For example, as previously discussed, how participants understand engagement through the lenses of 'doing,' 'involvement,' 'contribution' and 'helping' are important dimensions underpinning how activity and students' interaction with this is perceived. Finally, how student behaviour can be understood in relation to learning opportunities is described in Chapter 6 discussing student patterns of behaviour. Here the typical elements of 'sensing the situation,' 'prediction making,' 'avoidance,' 'hinting and hoping,' 'adaptive behaviour,' 'cherry picking' and 'keeping the peace' shape how a student may behave in relation to a clinical activity and the learning that may arise from this.

During the member-reflexive focus groups, the early ideas for this individually constructed perspective on learning opportunities were presented. However, the participants struggled to engage with this concept beyond the notion that as individuals they had a part to play in defining what learning they may experience. This is perhaps unsurprising given the complex philosophical underpinnings of social constructivist approaches to understanding reality and points to a limitation of member-reflection or member-checking in affirming conceptual models (Thomas, 2017, Angen, 2000, Tracy, 2010).

9.3.3 Decision-making influences according to time

A deficiency in the literature outlined in Chapter 2 was how medical student engagement with opportunities is influenced moment-by-moment. The dynamic nature of this phenomenon requires an understanding of how medical students' reality is shaped by their experience of time. Figure 36 outlines how influences can be broadly categorised according to the timeframes of 'current/future,' 'recent' and 'longstanding.'

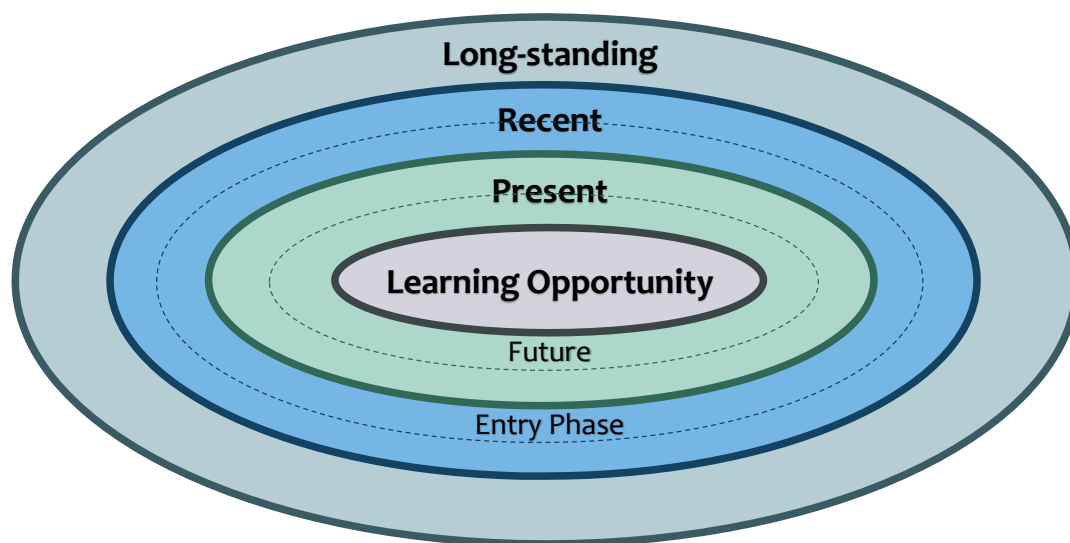


Figure 36: Decision-making influences over time

Figure 36 Legend: The concentric circles represent the time-frames over which influences over decision-making operate. Within the dotted lines are specialist significant periods within these time frames. Firstly is the 'entry phase' which marks the recent experience of having entered a new clinical environment which is critical. Secondly is when in the present moment students try to predict the future.

Firstly, central to the construct of learning opportunities is what is experienced in the present moment. Given the retrospective nature of studies of student learning, this is perhaps the most complex reality to capture and has certainly been the least studied. Moreover, much of what is experienced in the moment is unconscious and so not easily accessible to investigation. Core to this thesis has been a gradual co-construction of student experience of reality 'in the moment', through crystallisation of multiple sources and gradually evolving conceptual development (Ellingson, 2009, Richardson, 2000). For example, one element of the experience of the present is the student tendency to look towards the future as part of 'prediction making' which strongly featured in this thesis and was alluded to in other work (Hagg-Martinell et al., 2014, Berkhout et al., 2015). Thus, the perception of experienced reality is compounded by past prophesising. However, though much of decision-making is implicit, this investigation has also studied elements which are explicit, such as the nature of the origin of student engagement in 'initiation points.' This outlines the role of peers, staff, clinical activity, chance and inactivity as springboards for activity.

Moreover, this study also describes specific student choices with respect to engagement. For example, the 'positive' decisions to stay and opt in to opportunities and the 'negative' decisions to decline, delay, withdraw, wait, leave or 'skive'. This is a novel aspect of study, where previous work relating to medical student decision-making has been the choice of module, programme or career or the decision to move abroad (Reed et al., 2001, Ladha et al., 2022, Zigrossi et al., 2019, Richardson, 2009).

Secondly, 'recent' experiences over the time frame of minutes, hours, days and even weeks shape student decision-making. An important example of this is outlined in Chapter 7 where the influence of the time-period of 'entering' clinical environments is described as critical to student learning. This includes the spaces students physically occupy when they arrive, and the extent to which the students can form social connections on entering an environment. This determines whether a student's initial experience is one of feeling 'lost' or 'found.' The importance of 'first impressions' is described in the literature regarding how students perceive the psychological safety of a clinical environment (McClintock et al., 2022) and how they make judgements about approaching staff members for learning opportunities (Lyon, 2004).

Finally, there are influences on decision-making which are 'longstanding.' These include influences which remain relatively static over-time such as student habits, beliefs, traits and personality, the architecture of the clinical and medical school environment and the nature of students' social relationships. Some of these dimensions have been well studied in previous work such as how students experience clinical environments, and peer and near-peer relationships in relation to learning (Berkhout et al., 2015, Dornan et al., 2005, Tai et al., 2017, Hoffman and Donaldson, 2004, Sheehan et al., 2017, Sheehan et al., 2005, McKenna and Williams, 2017, Berkhout et al., 2017a, Bransen et al., 2022). Clinical supervision, student identity and professional development are also topics of established interest (Thyness et al., 2022, Park and Hong, 2022, Cruess et al., 2014, Adema et al., 2019, Findyartini et al., 2022, Kalen et al., 2017). Other dimensions which are novel or under-developed will be explored in greater detail in the subsequent sections, including the complexity of students' social relations, the contextual influences external to the clinical environment and students' value systems and motivational

drivers. The following section introduces these elements according to the broad categories of 'individual,' 'social' and 'environmental' influences.

9.3.4 Individual, social and environmental influences on decision-making

Concurrent to their correlation with the time-frames of 'current,' 'recent' and 'longstanding,' the influences on student decision-making also broadly mapped to whether they were personal to the individual ('individual'), pertained to social relationships ('social') or were a feature of the external contextual features of the clinical placement, the university, or the students' personal lives ('environmental'). See Figure 37.

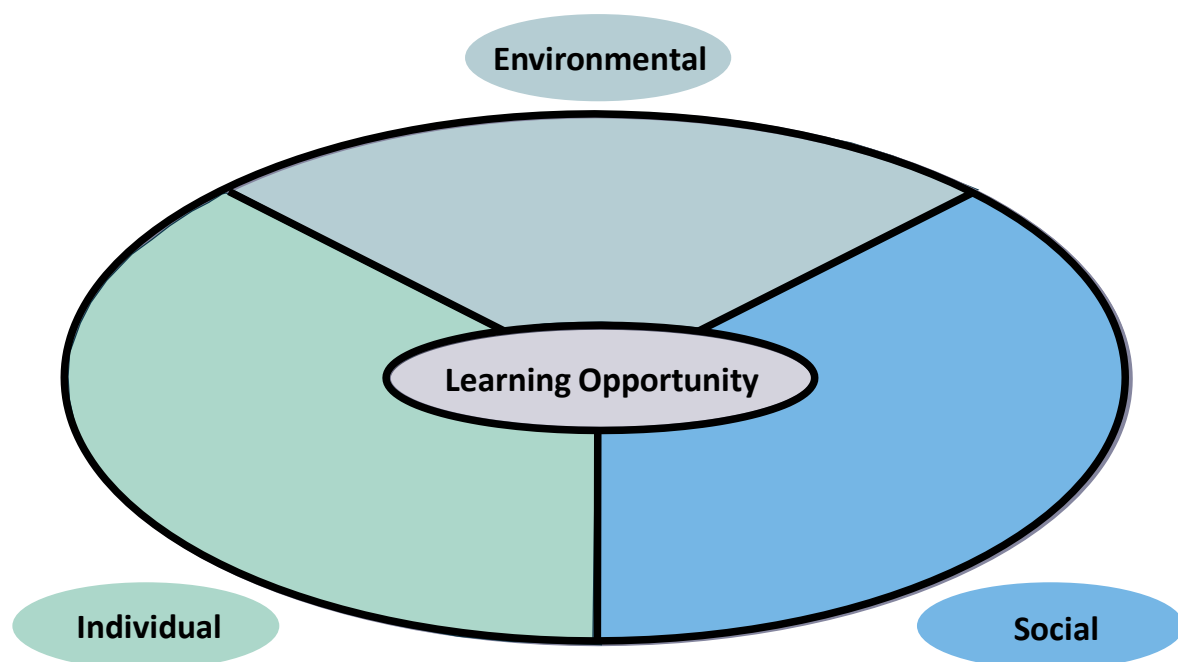


Figure 37: Sub-categorisation of decision-making influences

Figure 37 Legend: This graphic represents how influences over decision-making are sub-categorised as either environmental, individual or social.

The following section outlines the important contextual influences according to each category and how they broadly map to the previously referenced timeframes. These are presented in Figures 38, 39 and 40.

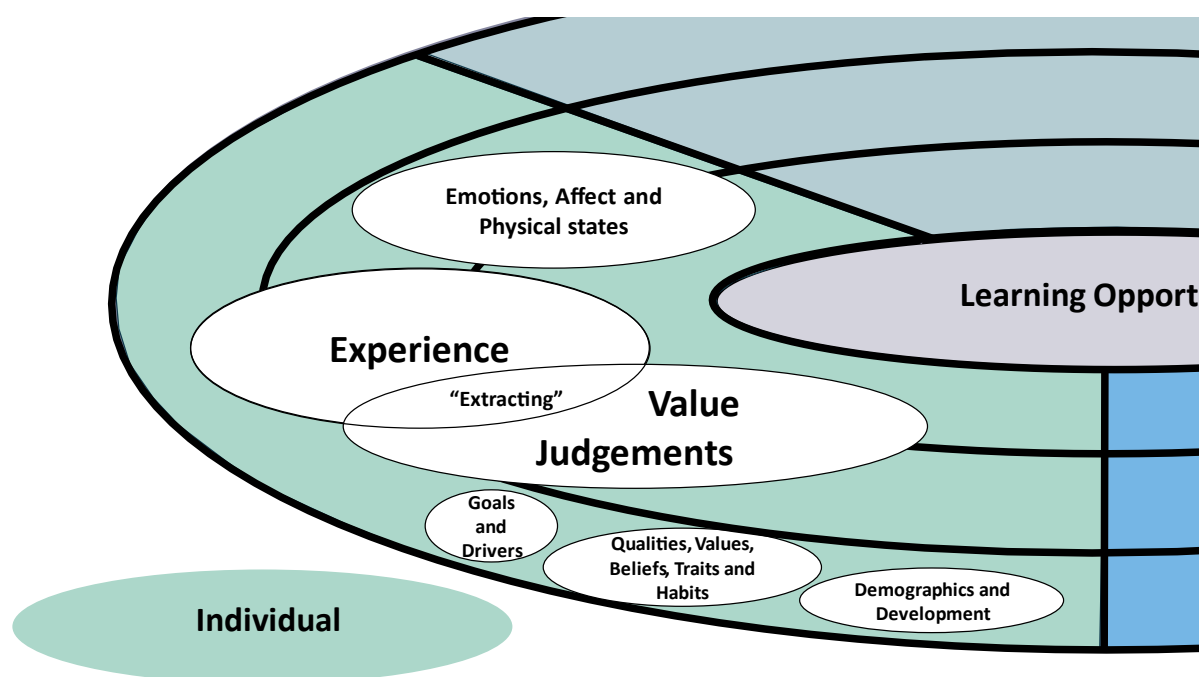


Figure 38: Individual influences on decision-making

Figure 38 Legend: This graphic represents individual influences over decision-making. These are described in the white circles. They are mapped to the time frames they broadly apply to where the most peripheral circles are long-term, followed by recent and present as per Figure 36.

An individual's demographics and developmental status e.g gender and stage of training were perceived by the participants to influence decision-making, for example, increased proactivity as a graduate, or later in the medical programme. Sub-analysis according to demographic was not feasible in this investigation, but detailed demographic information was collected to contextualise the findings, recognising the prior importance established of these characteristics (Babaria, 2009, Kristoffersson et al., 2018, Hall, 2002, Sans de Acedo Lizarraga, 2007, McGarvey et al., 2015, Vaughan et al., 2015, Beagan, 2005, Price and Wright, 2010).

The participant population is considered heterogenous. However, there were common qualities that were apparent or which the student self-identified with which influenced engagement. Examples included 'keen-ness' to learn, pragmatism and the tendency towards rule-abiding. Moreover, the students exhibited a range of traits and qualities according to key characteristics such as adaptability, proactivity and emotional resourcefulness which influenced engagement depending upon where students fell on the spectrum. For example, in this study, emotional vulnerability led

to a reluctance to ask questions, whereas resilience promoted engagement in the face of challenges. Self-esteem was also highly influential in determining behaviour, whereas low-self-esteem could be both motivational where students strove to hide weaknesses and demotivational if they chose to give up. Moreover, these traits and qualities could manifest in habits, such as leaving the clinical environment early if they felt they were not gaining from an opportunity, or adopting alternative self-led activities. Leaving the clinical environment early has also been identified in other work examining medical student behaviour on clinical placement (Thyness et al., 2022, Brown et al., 2023). Further established patterns of behaviour were complex as described in detail in Chapter 6. Personal values were also influential, for example a sense of morality driving patient care, financial propriety encouraging students to make the most of fees spent and egalitarianism as a driver to challenge hierarchies.

Related to students' personal values were their individual goals and drivers. Assessment was a predominant motivational force, where the aim of passing exams was pervasive, resonant with previous work and the established principal of 'assessment driven learning' (McGinness et al., 2023, Brown et al., 2023, Ferris and O' Flynn, 2015, Woods et al., 2011). Other motivational drivers included the ability to function as a (good) junior doctor and to be successful in achieving a high-performance state. Generally, the students lacked specific goals, and those they did have could be limited, for example to improving clinical procedural skills.

When faced with potential opportunities, students evaluated these according to existing beliefs, some of which were longstanding. Recognising that previous literature has referred generally to medical students prior 'beliefs' as being influential over learning on clinical placement (Brydges and Butler, 2012, Gardeshi et al., 2018), this investigation provides rich descriptions around the nature of relevant beliefs, for example, opinions around the relevance of administrative tasks to student learning or the value of passive, repeated or unstructured tasks. In general, opportunities were weighed according to whether they were 'useless/helpful' or 'interesting/boring' and how they related to assessment. The participants were preoccupied with considering what had been 'extracted' or 'gained' from experiences. Recent or current experiences and whether these were positive or negative influenced students' subsequent behaviour. This was particularly pertinent

where they influenced students' emotions or affective state. Indeed, placement experiences were highly emotive, and differential engagement patterns were often manifested through a change in emotional state. The role of emotion influencing medical student experiences is increasingly recognised within clinical placements and the field of medical education more broadly (Berkhout et al., 2017a, Artino et al., 2012, Artino, 2013, Elnicki, 2010, McConnell and Eva, 2012, Weurlander et al., 2018). Physical states such as tiredness or hunger were highly influential regarding decision-making on placements aligning with prior work stressing the increasing recognition of student physical well-being on learning (McKerrow et al., 2020, Farrell et al., 2019). Indeed, clinical working is known to be physically taxing, yet this dimension can often be ignored in contrast to non-clinical settings where there appears to be a more concerted effort to promote student well-being (Dyrbye et al., 2019).

Social

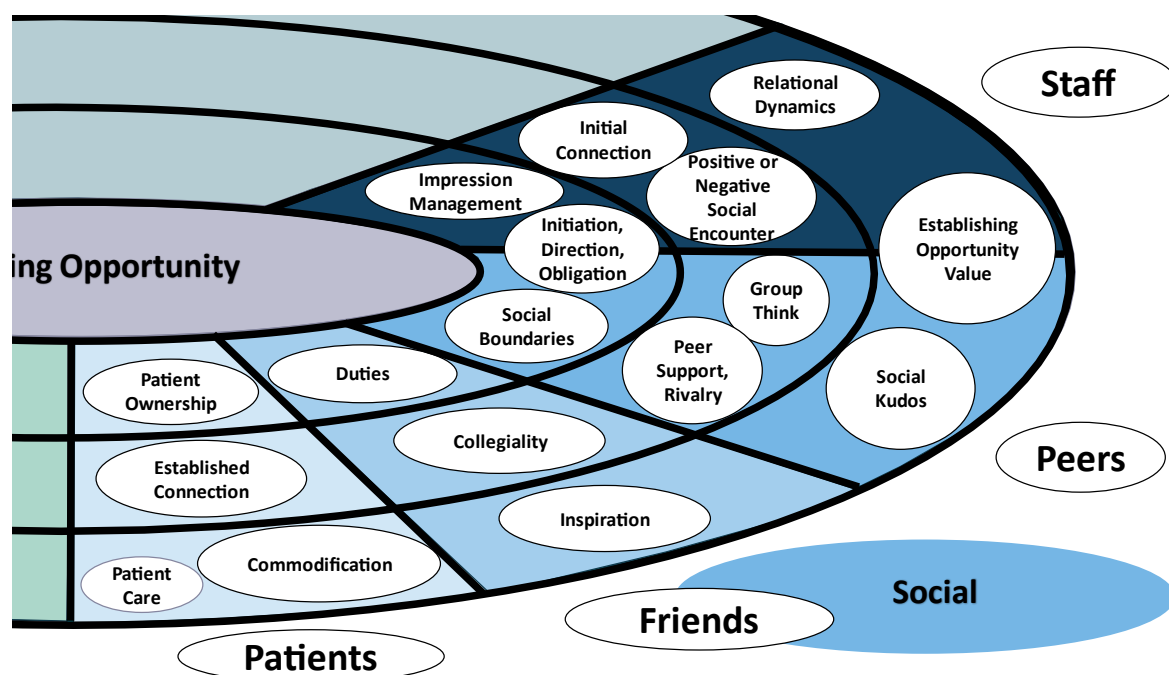


Figure 39: Social influences of decision-making

Figure 39 Legend: Social influences over decision-making are represented by the white circles within the coloured sections. They are mapped to the time frames they broadly apply to where the most peripheral circles are long-term, followed by recent and present as per Figure 36. The white circles peripheral to the coloured circle label the radial segments according to whether influences broadly relate to staff, peers, friends or patients. Overlapping circles span two domains.

Relationships with staff members generally, and with specific groups were highly influential. The nature of relational dynamics, including the medical hierarchy, had an enduring influence on student behaviour. The participants modulated their behaviour in anticipation of staff reactions in order to gain favour, for example the belief that asking questions would be appreciated or on the contrary, and that staff would be unconcerned if students left the clinical environment early. There was an ongoing process of students managing the impression they were making on staff members, such as through asking questions they knew the answer to or feigning interest in a consultant's speciality. The importance of 'impression management' is a well-recognised phenomenon for medical trainees and professionals, which can influence help or feedback-seeking behaviours (Kennedy et al., 2020, Bok et al., 2013). For medical students, work in the domain of psychological safety has elaborated that image management becomes particularly problematic where students feel insecure in environments, and that this can detract from learning (Thyness et al., 2022, McClintock et al., 2022).

Recent experiences of staff interactions were influential, such as the nature of their social connection and reception when entering new environments, and the physical experience of integration – or lack of this – which was largely socially determined. Pertinent positive social experiences influencing behaviour included feeling part of the team, being supported or 'looked after' or having a friendly encounter. Negative social experiences such as being belittled, being questioned intensively, being rejected, being unsupported in failure or having their care delegated to someone else could discourage engagement over short to long term periods. There is a broad student literature outlining the pervasive problem of student mistreatment with a general consensus that this occurs both through active measures and passive neglect (Mavis et al., 2014, Lind et al., 2020, Kloos et al., 2023).

Common to both staff and peers was the role they played in initiating student activity with opportunities. This could be through specific direction, invitation or through a sense of obligation. Similarly, both groups were influential in determining the sense of value of different opportunities. Staff members frequently detracted from specific activities, even to the point of inhibiting engagement with these. On the other hand, other opportunities became highly valued within peer groups, and were pursued as a form of social currency. Indeed, the sense of competition and complex social

dynamics amongst the medical student body is gaining increasing recognition including how this may intersect with placement experiences (McNeill et al., 2014, Stasiuk et al., 2022, Hommes et al., 2012, Lovell, 2015).

Additional peer influences included the process of recommendation and review of placements, which fed into student tendency to predict the nature of future opportunities and also influenced determination of values. In the moment, peer social boundaries determined whether or not a student might engage with an opportunity, for example, the tendency for students to form 'territories' around specific clinical areas, and the importance of turn-taking in relation to clinical skills. In the short term there was evidence of peer 'group think,' where the students identified with the belief systems of their peer group, for example determining acceptable behaviour in clinical areas around the time of summative examinations. The provision of peer support as a recent experience was also transformative in the likelihood for students to engage with opportunity, particularly where support was provided during the initial challenges of entering a clinical environment. Finally, the peer group provided an arena for social reward, for example the practice of sharing stories of clinical placement experiences which provided incentive to engage in opportunities that would be collectively considered as interesting or impressive.

Friendships are individually considered as special relationships with specific influences. Students felt an increased sense of duty towards friends which transcended that of their peers, for example in waiting in the hospital to drive a friend home. Informal or established friendships experienced in clinical areas could transform student experiences and promoted inclusion and engagement. Friendships could also be a source of inspiration for students where friends could motivate students to engage in tasks they would otherwise avoid. Indeed, the role of friendships in clinical environments is increasingly recognised in the medical literature, for example their role in overcoming hierarchies, forging cross-specialty alliances (Kennedy et al., 2020) and providing social support (Lu and Kumar, 2023, Berkhout et al., 2017a).

The student relationship with patients was not well defined by this study. In the short-term an important facet was whether the student felt a sense of 'ownership' or responsibility over a patient which prompted engagement in opportunities related to

that individual. Related but not essential to this concept was whether they had established a connection with a patient, for example through getting to know them over a period of time. A troubling longstanding influence was the commodification of patients, where the focus was individual gain through interactions which led to selective focus on patients considered to have rewarding characteristics. However, some backlash to this process was observed, where students could be seen to try to engage with patients on an emotional level as compensation for self-seeking behaviour. The students also had an enduring interest in ensuring effective patient care practices, and generally felt that patient needs and service delivery took precedence over educational provision. Moreover, though they did not generally feel they benefited patients in their role as a student, they held a longstanding motivation to learn in order to be good doctors and provide effective patient care in the future. These findings are perhaps better understood in the context of Talib et al's work, where students describe a conflict between identifying with patients or the medical team, and a sense of unavoidable loss of humanity and connection to patients as they progress in their medical careers (Talib et al., 2024).

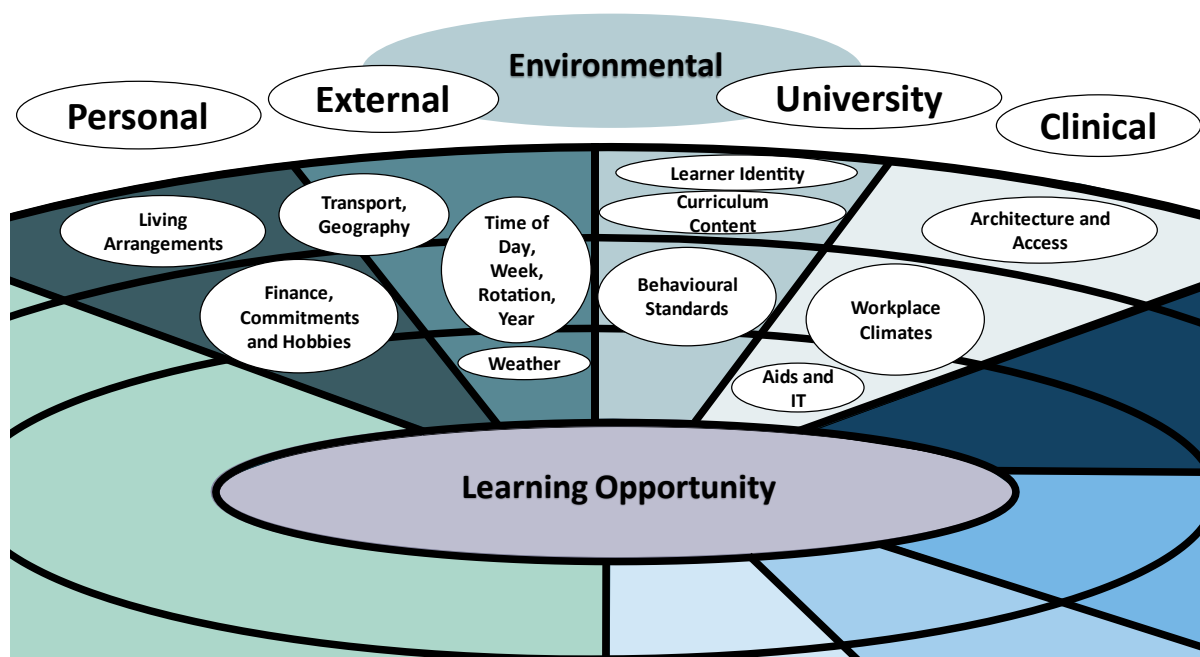


Figure 40: Environmental influences on decision-making

Figure 40 Legend: Environmental influences over decision-making are represented by the white circles within the coloured sections. They are mapped to the time frames they broadly apply to where the most peripheral circles are long-term, followed by recent and present as per Figure 36. The white circles peripheral to the coloured circle label the radial segments according to whether influences broadly relate to personal factors, external factors, the university context or the clinical context. Overlapping circles span two domains.

Although not the focus of this thesis, the students' personal lives and circumstances were seen to influence their decision-making. The participants' affect, emotional sense of well-being and physical state were particularly impactful, but these are described in the 'individual' category. A relevant long-standing dimension was their living arrangements, where living with other medical students was seen as a source of social support as well as encouraging peer-learning. Other duties and commitments outside of medicine were influential on a short to long-term basis, particularly where the students were under financial pressure, or had hobbies which necessitated specific time commitments. A factor which was both personal to the student and external was the geographical location of the hospital in relation to the student, and the facilities available to them to travel there. The practice of car-sharing, known locally as 'giving lifts', was surprisingly influential in determining students' time on placement due to the remote location of the study site hospital and

relative deficiencies in public transport. Indeed, the journey home from placement has been recognised as a forum for students sharing placement experiences (Keren et al., 2017), and the challenges in travelling to clinical placement is an established source of complaint or resistance from medical students (Salminen et al., 2016, MacRae et al., 2007, Bartlett et al., 2016).

Other external features included the 'time,' for example, the time of day, week, month or year relative to assessment schedules and the seasons. The students drew remarkable distinctions between the 'morning' and 'afternoon' on clinical placement, with differential engagement where this was promoted on the former, and diminished on the latter. The time proximal to summative assessments manifested dramatic shifts in student behaviour and priorities, a finding beginning to emerge in the literature (McGinness et al., 2023, Brown et al., 2023). Opportunities would also be viewed differently on nightshift, at the end of the week, or at different time points during the placement. Furthermore, the 'weather,' as another external force, could influence student behaviour, for example wanting to leave the clinical environment and make the most of good weather.

Moreover, another environmental dimension was that of the 'university' context. Although situated in the workplace, the students predominantly identified as 'learners' and as such had differential expectations of their own behaviour and that of others. They were disinclined to do 'work' or 'service provision,' particularly in the absence of remuneration or reward. This distinction between learning and 'service provision' has previously been highlighted in the literature (Gonzalo et al., 2017, Quillin et al., 2013, Ledger and Kilminster, 2015, Woods et al., 2011) and in particular as something medical students demonstrate resistance towards (Gonzalo et al., 2017, Woods et al., 2011). Staff members could be viewed as paid employees of the university with an obligation to teach and the students were quick to critically evaluate their experiences. Indeed, current placement experiences could be compared with previous experiences or those of students in other locales. The established processes of recommendations and reviews shared between students generated 'reputations' for particular settings which could equally provide a positive halo effect, as well as leading to negative predictions or evaluations. Indeed, the informal communication currents between students regarding orientation around placement experiences is increasingly recognised informally (Jaye et al., 2010), with

some educators formalising the process to support student navigation (Carter et al., 2021, Masters et al., 2013). On this note, the university machinery bore some influence on clinical placement experience for example through induction processes, guidance documents and the provision of timetables. Of these, clinical timetables appeared to be critical to successful navigation, whereas guides and handbooks were frequently ignored and therefore are unlikely targets for improving student experiences. Indeed, a recent paper highlights the tension between university and clinical spheres with respect to student experiences on clinical placement and in particular identifies challenges in how students make use of university artefacts and support mechanisms (Stoffels et al., 2023). Finally, the students were acutely cognisant of behavioural standards set by the university and had a sense of being vulnerable to correction. That is not to say that rules were strictly followed – as evidenced by the failure to adhere to expected working hours – but could modify behaviour if punishment or other negative repercussions were anticipated. Indeed, the influence of university tactics to modify student behaviour with respect to professionalism is well studied in the literature (Brennan et al., 2020).

Clinical environments were arguably the most pertinent determinants of student experiences and decision-making. Longstanding influences included the physical structure of clinical environments, and how students were able to integrate into these. This was particularly relevant given rapid student rotation between placements and the challenging architecture of hospital environments. Within workplaces, students developed an impression of the ‘climate’ of locations, which was multifaceted and involved judgements made on complex social dynamics as well as elements pertinent to the delivery of patient care such as clinical acuity, patient census and staff ‘busyness.’ Important social elements included student numbers, perceived sense of competition and whether staff members were ‘nice.’ Students made decisions regarding engagement based on their early process of ‘sensing’ the climate, for example to lower their threshold for leaving if they felt staff were not receptive to teaching or friendly. Finally, a dimension which influenced student learning from moment to moment was how well students were able to integrate into the physical environment, for example through gaining appropriate IT access, having a designated space or being provided with important patient related materials such as hand-over sheets or jobs lists.

Conclusion

Individual, environmental and social experiences all influence student decision-making related to learning opportunities during clinical placement and exert this influence broadly over different time periods. Understanding students' patterns of behaviour on placement requires an appreciation of their individual circumstances, their belief systems and how their experiences on placement are conceptualised and judged. Social influences are highly influential, and complex inter-personal dynamics between staff and peers modulated student activity to a significant extent. Finally, the context for student learning both in clinical environments and outside of these need to be accounted for, where particularly the latter can dynamically influence what students chose to engage with but perhaps have been under-appreciated by clinical educators.

9.3.5 A worked example

An adaptation of the following illustrative narrative was presented to the study participants as part of the member-reflexive processes. It is fictitious but draws together real examples across multiple participants. The intention is to provide a worked example of how the described individual, environmental and social processes combine to influence student behaviour over the course of a day on clinical placement. Reference to the influences as detailed in the final conceptual map are in brackets in italics.

The scenario addresses a student's decision-making in relation to the learning opportunity of seeing a patient. The student is placed with another student on a cardiology ward. Their intention for the day was to see a patient with heart failure, as that is a 'core condition' on the syllabus (*curriculum content*) and something they hope to 'tick off' in their log book (*goals and drivers*). However, by lunchtime that day the student feels bad (*emotions, affect and physical states*) following intensive questioning on the ward round from the consultant (*experience*) which knocked their confidence (*positive or negative social encounter*). They feel demotivated to see any patients (*goals and drivers*) – even if there was one with heart failure. However, the other student on the ward approaches the student and declares that there is not much happening and asks if they would go with them to and see a patient (*initiation, direction, obligation*). The student deliberates, as though they aren't keen, they feel it

might make them look bad if they say no. Also, if they leave the ward before the other student this may leave a negative impression on the consultants (*impression management*). As a result, the student agrees to join their peer. They follow their usual pattern of asking the junior doctors if there are any good patients to see on the ward. They have prior beliefs of what makes a 'good patient,' for example being able to tell a coherent story and having signs and symptoms that can be ticked off in the logbook (*qualities, values, beliefs, traits and habits*). The doctor directs them to a rare case (*establishing opportunity value and initiation, direction, obligation*). They evaluate that this is unlikely to be *useful* for examinations but would be interesting in itself (*value judgements and extraction*), and may be an impressive story to tell their flat-mates (*living arrangements*) on the car journey home together (*transport, geography and social kudos*). There is often some unspoken rivalry about who has had a better day on placement (*peer support, rivalry*). Whilst in the doctors' office, another doctor arrives who has a reputation for being interested in teaching. The student takes the chance to ask them if they will come and watch the patient review, as they believe the case will be infinitely better if they receive feedback (*value judgements*). However, the registrar explains that there are lots of sick patients on the ward so will be busy until 4:30pm when they would happily accompany them (*workplace climates*). The student considers this briefly, but quickly decides there is no way they will be sticking around on the ward until then. They often leave early particularly on a Friday (*time of day, week, rotation, year*). In addition, the weather is nice (*weather*), and they won't get much chance to enjoy it over the weekend as they are working at their part time job (*finance, commitments and hobbies*). Plus, they have seen plenty of patients before and they are not being *paid* to be on the ward (*learner identity*). In conclusion, the student politely declines the registrar's offer and heads off with their peer to see the patient. The pair decide to format the examination with strict time limits to help prepare for their assessment (*qualities, values, beliefs, traits and habits*). They recognise that this is artificial, but they won't even get to be a doctor if they don't pass their exams (*goals and drivers*). And they feel a particular pressure to be efficient and get the most of the time spent on placement (*extracting*) due to their commitments outside of medicine (*finance, commitments and hobbies*). Time feels precious. After seeing the patient, the student feels like they have achieved something (*experience*) and their mood is lifted (*emotions, affect and physical states*). They decide they will make the effort to stay after the ward round

next week following the day's positive experience (*experience and value judgements*).

The figure below maps the above narrative to the over-arching conceptual model, demonstrating how this can be used to make sense of student decision-making with regards to learning opportunities.

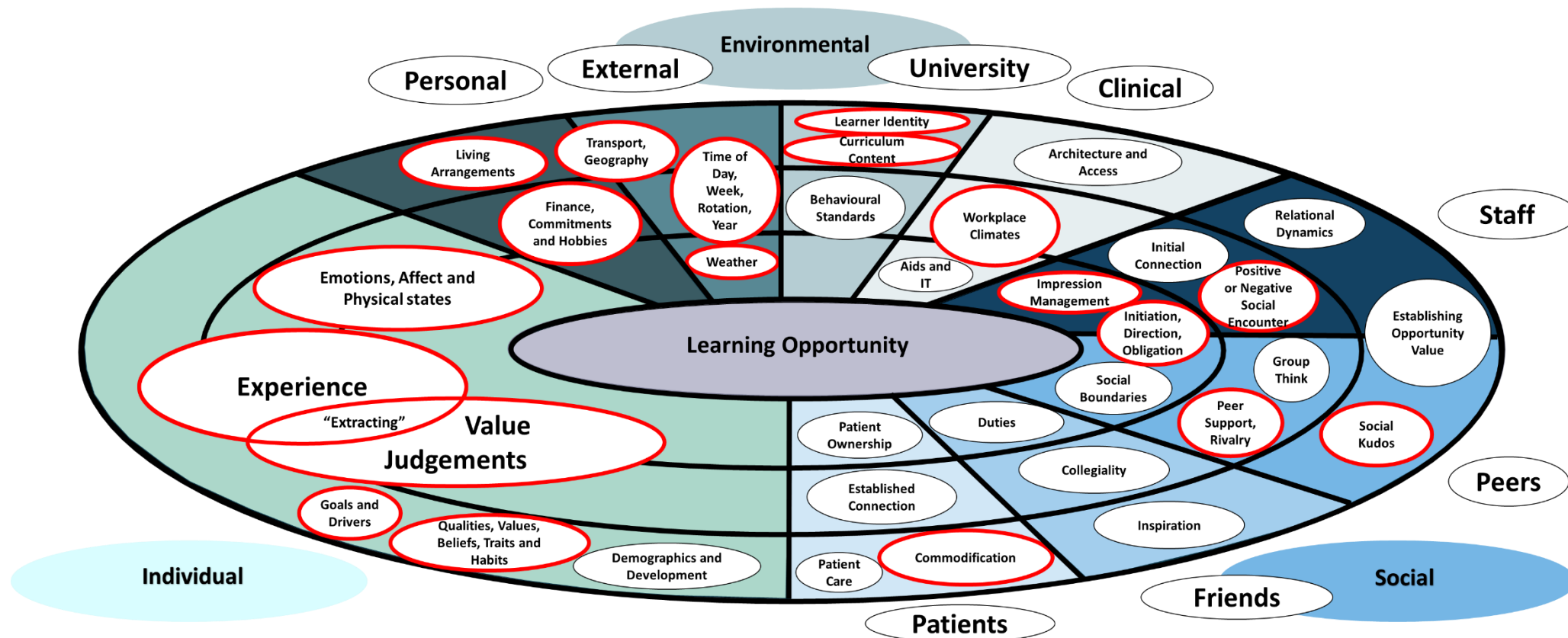


Figure 41: Over-arching conceptual model with influences mapped to narrative account

Figure 41 Legend: This diagram maps the inter-related processes underlying medical student decisions to engage with learning opportunities during clinical placements. The radial lines sub-divide the categories according to whether they are individual, social or environmental shown in the different colour blocks. For the 'social' and 'environmental' factors, there are further sub-divisions to explain sub-categories, described in the white circles peripheral to the central figure (see figures 39 and 40). Circumferential divisions mark different time periods with 'longstanding' on the periphery, 'recent' at the next level and 'current' at the subsequent level. The white circles within the coloured diagram map processes influencing decision making which are positioned according to their time-frame of influence. Those outlined in red are described in the accompanying narrative.

9.4 Discussion

9.4.1 Introduction

The following section discusses the over-arching conceptual model of this thesis with reference to pertinent psychosocial and educational theory. In particular, Billet's theory of workplace learning will be used as a framework to examine and critique aspects of the model. The section will begin with a perspective on how learning opportunities are conceptualised and then will move on to discuss the individual, social and environmental influences on learning. Finally, the perspectives around student patterns of behaviour will be briefly discussed.

9.4.2 *Learning opportunities and decision-making according to time*

This thesis focuses on the dynamic processes influencing decision-making. This moment-by-moment approach parallels and is inspired by the perspective of Rogoff, where human development is viewed across different time-frames, the smallest of which is 'microgenetic' or moment-by-moment (Rogoff, 1990, Billett, 2009b). Indeed, this understanding of ontogenetic development in turn draws its roots from Vygotsky's stance that the nature of a being's development can only be understood dynamically for, 'it is only in movement that a body shows what it is', page 65 (Vygotsky, 1978). Furthermore, the emphasis on decision-making processes as they relate to the progression of time takes heed of the development of personal epistemologies over a life-time and that these developmental processes take shape with the passage of historical time (Rogoff, 1990, Billett, 2009b, Billett, 2009a).

From a position of dynamicity, learning opportunities are defined in this thesis by how they are perceived by the study participants. This understanding resonates with the workplace learning philosophy of Billet who considers that inherent to learning is how individuals perceive and make meaning of opportunities, described as 'construal', and how knowledge is then generated through activity, described as 'construction' (Billet, 2011, Billett, 2009b). Integral to this thesis design is an emphasis on the reality of practice and how learning opportunities are experienced 'on the ground,' rather than aspirational conceptualisations of learning opportunities as defined by educators. These opposing perspectives are defined by Billet as the 'situational view' representing the former, and the 'occupational view' representing the latter (Billet,

1999). Furthermore, the activities from which learning opportunities are conceptualised are understood from descriptions of actual practice, rather than as collections of skills or objectives that might be represented within formal curricula (Billet, 1999).

9.4.3 Individual aspects

This thesis emphasises the role of the individual and their characteristics, experiences and intentions with respect to the decision to engage with learning opportunities. This is a dimension that is neglected by some theories focusing overly on social process (Lave and Wenger, 1991, Wenger, 1998), but fully embodied in the work of Billet. Indeed, Billet asserts that learning is effortful, dependent on individual action and has inherent subjectivity (Billet, 2011). Considering the individual dimensions highlighted by this thesis, several intersect with concepts developed by Billet through his arguments for the role of individual agency in engagement. These will be considered in turn.

Firstly, it is useful to revisit the core tenets of Billet's workplace theory of 'workplace affordances' as described in Chapter 2. This theory is founded on the belief that interaction with the social world is the key basis for learning (Billett, 2002).

Recognising that learning in workplaces differed according to the extent learners were able to participate with practice, the concept of 'affordances' conceptualises the degree to which individuals are invited to learn and engage in activity (Billet, 2011). 'Affordances' include the nature of the tasks and goals as part of workplace norms and practices as well as complex social dynamics and power relations which support inclusion or foster exclusion (Billet, 2011, Billet, 2001).

Billet recognises the varying 'invitational' nature of different workplaces, that is, the extent to which workplaces afford participation varies according to the individual. Workplaces are referred to as 'contested' rather than benign, with unequal distribution of the support and guidance required for participation (Billet, 2001, Billet, 1999, Billett, 2002). This is particularly pertinent to the concept of 'demographics' as a factor influencing decision-making in relation to learning opportunities in the conceptual model of this thesis. Billet notes 'gender and race' as factors which influence distribution of opportunities, alongside differences in social background,

social connections, how competent an individual is perceived to be and their status within the workplace (Billet, 2001).

Coupling 'demographics' is the concept of 'developmental stage'. Billet's work recognises the role of developmental processes in shaping how an individual will construe and construct experiences, through changes in cognition and behaviour that occur over time (Billet, 1996). The study participants recognised the role that their increasing maturity and progress through the stages of the medical curriculum had on their decision-making practices. The role of 'experience' is also cited where both short, medium and long-term experiences influence moment-by-moment decision-making, particularly with respect to how these experiences are evaluated. Indeed, a key tenet of Billet's theory is the role differential past experiences play in developing unique 'personal epistemologies'. These are described as 'ways of knowing and acting' that determine how individuals will relate to opportunities and in particular how these will be construed (Billett, 2009b, Billet, 2011). Relating back to the conceptual model, this can be seen to resonate with the process of making 'value judgements' about opportunities and even to individuals' unique qualities, values, traits and habits. Indeed, individuals' views about work and the workplace are considered to be personal and in turn arising from distinctive personal experiences, including those gained from the workplace, leaving a 'cognitive legacy' (Billet, 2011, Billett, 2009a, Billett, 2009b). This thesis cites many examples of how recent experience in the workplace goes on to shape student decision-making about subsequent opportunities. Furthermore, Billet recognises that individuals within the same environment can differ in their efforts to engage with learning opportunities, where some individuals fail to participate even in optimal conditions and others operate effectively even with low levels of support (Billet, 2001). This recognition parallels the importance of individual's 'traits and values' identified by this thesis, in particular the concept of the 'keen' student.

Finally, the conceptual model includes individual 'goals and drivers' as an important dimension affecting decision-making, including motivational forces and individual interests. Billet recognises that individuals will negotiate their behaviour in the workplace according to their personal interests and goals (Billet, 2011). Motivation to learn was also considered to be contextually dependent – something which will be considered in more detail in the subsequent section (Billett, 2002).

9.4.4 *Social aspects*

In addition to individual agency with respect to workplace learning, Billet equally attends to the social drivers influencing participation, recognising that learning is unlikely to happen in isolation (Billet, 1999). In relation to individual cognitive processes, Billet recognises how past social experiences lead to the development of a sense of self (Billet, 2011, Billett, 2009b). Indeed, the ongoing interdependence between social processes and individual cognitive processes is recognised, and this duality serves the need of work and society as well as individual learning (Billett, 2009b, Billet, 2011). The following sections will relate Billet's understandings of the social influences of workplace learning to the social processes underlying student decision-making in the overarching conceptual model.

Firstly, recognising the duality of social and individual processes in supporting student participation, the influence of social suggestion is significant in determining student engagement. This can be both overt in the form of external social support or guidance or covert and even unconscious (Billet, 2011). Considering the former, this dimension was particularly manifest in the roles staff and student peers played in initiating action or providing direction or guidance to encourage engagement (Billet, 2011). Indeed, Billet recognises the varying levels of engagement manifest by individuals with respect to opportunities according to what they are encouraged to participate in, and that support and encouragement is not uniform (Billet, 1996, Billett, 2002). With respect to the latter 'subtle social suggestion,' this was perhaps most evident in student sensitivity to peer and staff value judgements in relation to how learning opportunities are evaluated (Billet, 2011). This contributed to disengagement from certain types of task, and boundaries to the usual student role.

Secondly, a key relational dynamic previously touched upon is the 'contested' nature of workplaces with respect to access to workplace opportunities (Billet, 2001, Billett, 2002, Billet, 1999). As part of this Billet recognises the tendency for 'cliques' and 'affiliations' to develop in work environments (Billet, 1999, Billett, 2002). Within this thesis, this phenomenon is perhaps most evident in manifestations of 'tribalism' according to medical speciality. This phenomenon influenced students' perceptions and predictions of experience according to specialty environment. It also arguably

led to and is perpetuated by the student tendency to hide or fabricate specialty interests in order to gain favour.

Thirdly, another manifestation of the social tension recognised by Billet is the political and power differences manifest in hierarchical social structures (Billet, 1999, Billet, 2011, Billett, 2002). A perception of 'lowly' status in the clinical hierarchy was an important relational dynamic within the conceptual model and recognised as a key driver of medical student disengagement. Indeed, where certain individuals have a power advantage, Billet recognises the tendency for individuals to align with the interests of those in authority, with the intention of generating a favourable impression, particularly where colleagues are judged on their perceived competence (Billet, 2011, Billet, 2001). Manifestations of this phenomenon in this study was the consistent behavioural practice of medical students of endeavouring to make a positive impression, as well as other aspects of the consultant- student relationship such as the exertion of the latter's direction and control.

Finally, the contested nature of workplace environments was also evident in relation to peer relations. Billet described that unequal opportunities for workplace engagement and reward can induce competition between individuals and even lead to marginalisation of certain groups for individual gain (Billet, 1996, Billett, 2002). Indeed, the peer dynamics within this thesis were complex, with competition evident in and driving turn-taking behaviour, student 'territories' and engagement with the purpose of attracting social kudos.

9.4.5 Environmental influences

Billet recognises the role of context and in particular the role of the physical 'brute' world in influencing workplace participation. Rejecting growing relativistic leanings within workplace learning theory, Billet firmly purports a belief in a reality based on objective physicality described as the 'brute' world which consists of indisputable 'facts' (Billett, 2009a). From this realist perspective, participation is dependent on the physical environment and tools available to do the job (Billet, 1999). Similarly, this thesis also emphasised the role of the physical environment in determining student engagement, for example at the level of the architecture of hospital buildings, the layout of wards, the physical elements students accommodate to facilitate their involvement and participation. Indeed, the role of student physical placement and

how they socially integrate into environments was particularly key during the 'entering' period of arriving in clinical environments. Reconciling this co-dominance of the 'physical' realm to the conceptual model with social constructivist epistemology is challenging. Billet suggests that physical factors are neglected in modern learning theory, which perhaps can be accounted for by the recent predominance of interpretivist and relativistic ontological perspectives (Billett, 2009a). Whilst this thesis maintains that there is no knowable e.g. measurable objective physical reality, it does not dispute that the multiple realities may take shape from perceiving a shared physical dimension.

Furthermore, in addition to physical influences, Billet also recognises the role of social processes in determining practice norms, activities values, expectations and goals within the workplace which can be situationally dependent (Billet, 2011, Billet, 2001, Billett, 2002). Indeed, contextual factors are considered by Billet to dynamically shape individual participation and learning in a mutually interdependent relationship (Billet, 1996). The importance of context to the conceptual model was recognised in the early stages of data collection, resulting in a research objective dedicated to its exploration as outlined in Chapter 7. Important contextual features included those pertinent to the clinical environment (workplace 'climates') as well as the contextual dimensions of being enrolled on a medical programme and existing as a social being in the wider world. Additionally, Chapter 5 outlines 'Norms and Structures' surrounding the process of students navigating learning opportunities, with a particular focus on the 'navigation norms', describing commonly encountered processes. These are all consistent with Billet's understanding of context and environment as they relate to workplace learning, but are described with increasing specificity with respect to the study phenomenon.

9.4.6 Patterns of behaviour

A key research objective in this study was to examine student patterns of behaviour during placement and how these relate to learning on clinical placement. From this vantage, an intention was to understand the study phenomenon from the examination of collective behaviour that may go beyond the individual. Such generalisations and 'typecasting' seem controversial in an individualistically focused societal sphere (Scott, 2020, Fuentes et al., 2021). Countering this concern, the

perspective of this thesis can be seen to parallel Newell and Simon's cognitive theory on human problem solving (Newell, 1972). From this vantage, the role of individual freedom in determining the outcome when faced with a task is wholly recognised. Examples cited include the individual negotiating with the taskmaster over the task, deliberately failing the task or simply switching off and ignoring the task. However, inherent to this theory is a recognition that if humans are faced with the same problem within equivalent settings, and have the same goals, then commonalities in behaviour are observed (Newell, 1972). This resonates with the study findings, where students are found to share common motivational drivers and goals, for example 'to pass final exams' or 'become a (good) junior doctor.' Moreover, they also share a similar social and cultural experience within clinical placements.

9.4.7 Strengths and limitations of the study

This was a broad area of research focus with the aim of uncovering both implicit and moment-by-moment processes which are hard to 'know' despite careful study design. Furthermore, due to the COVID-19 pandemic, certain elements had to be revised which may have been illuminating – for example reactive 'mini-interviews' during a period of observation. Although sampling was adequate to achieve conceptual saturation, there is a possibility that certain 'voices' were unheard, particularly recognising the increasing drop-out rate from the study with the advent of the pandemic (see Appendix B). The disruption in the initial transition to remote methods may also have impacted the findings. However the reflexive steps taken to survey participants' experiences and findings in the literature suggests that data collection via videoconference bears equivalency in many aspects to research undertaken face to face when conducted with care (Abrams et al., 2014).

With respect to the principal investigator's position within the education department, power differentials could potentially have led to participant censoring. However, the investigator was careful to be reflexive about this dynamic throughout the study (Olmos-Vega et al., 2022). Furthermore, the participants' candour regarding sensitive subjects such as their own unprofessional behaviour is reassuring in this respect.

The transferability of the findings is a subjective judgement according to the reader (Morse, 2018). This investigation was limited by a focus on one geographic population of medical students rotating through three hospitals and various

community settings in one region of the UK and as such elements of the conceptual model may reflect local cultural and phenomena. However, the transferability of this work is arguably enhanced in this work through rich descriptions as outlined in the synthesis, where a focus on making implicit phenomenon explicit was embedded in the study design (Tracy and Hinrichs, 2017, Tracy, 2010, Bryman, 2016).

Furthermore, the credibility of the findings have been enhanced through crystallisation (Ellingson, 2009, Richardson, 2000, Tracy, 2010) and affirmed through the described member-reflexive process (Tracy, 2010, Olmos-Vega et al., 2022). The dependability of the investigation is enhanced through detailed explication of processes, and through reflexive approaches to analysis by engaging in multiple coding of transcript and critical discussion of data and analysis in qualitative research groups (Bryman, 2016, Olmos-Vega et al., 2022).

Finally, early evidence points towards the ‘authenticity’ of the study, where the research is beginning to affect social change. (Lincoln and Guba, 2000, Bryman, 2016). Feedback from presentation of the conceptual model in international medical education fora suggests that this resonated with the experience of students and educators (Chapter 12 and Appendix P). Moreover, in the study locale the findings are starting to be incorporated into policy changes, with plans to present the work further at the UK medical schools’ council.

9.4.8 Conclusion – findings

This chapter contextualises the conceptual model with respect to the current medical literature and workplace learning theory. Billet’s model of workplace learning theory with a focus on workplace ‘affordances’ is closely aligned in structure with the model, and provides a useful lens for analysis, where multiple parallels have been outlined. Some elements of the model are previously described and have been explored with reference to the existing literature. Other elements are novel, and have been elucidated through the process of this investigation. The outcome of the investigation has been to develop a conceptual map of the inter-related processes underlying student engagement with learning opportunities. The limitations of the study are described in detail, providing readers with the opportunity to make their own evaluation as to the transferability of the findings to their specific research context.

9.5 Chapter Conclusion and link to next Chapter

This chapter summarises and synthesises the findings through data generation and literature review and presents them in an over-arching conceptual model which addresses the investigation aim. A broad overview is provided of the individual, social and environmental influences regarding student decision-making including how these bear effects over different time periods. How the findings relate to the medical literature is presented where relevant. The over-arching conceptual model is then interrogated with respect to existing workplace and educational theory and in particular Billet's theory of workplace affordances. The following chapter describes recommendations for practice and further research in light of this model.

10. Chapter 10 - Recommendations for Practice and Future Research

10.1 Introduction

This study provides insight into areas of medical education practice which could be targeted to promote student engagement with opportunities. Recommendations relating to the practicalities of organising clinical placements will be given first. This will include some easy and specific suggestions which might be transformative. Secondly, aspects pertaining to student motivation will be explored with reference to curricula design and individual action. These aspects are more challenging to offer concrete recommendations against, but will give points of focus which may inform decision-making. Thirdly, recommendations will be given on how to manage the social dynamic between student and staff, with specific points of self-reflection to consider for medical educators working directly with students. Finally, there will be a short discussion on how this study could be used to interpret and respond to student feedback from their experiences, where student feedback is a key vehicle effecting change in modern medical programmes.

10.2 Clinical placement practicalities and organisation

Organising clinical placements is a complex and significant work pressure for medical education providers. Whilst recognising that existing unhelpful practices derive from practical constraints or pressures, this discussion offers areas of opportunity to consider modifying practice.

10.2.1 Timetabling

Timetables

Navigating between environments is often burdensome and anxiety-provoking for students. An element which alleviated pressure was having timetables available to students well in advance of their experience. Indeed, GMC guidelines stipulates that timetables should be available 'as soon as possible' (General Medical Council, 2022).

Moreover, simply timetabling a location was perceived poorly by students who appreciated having a named person to navigate towards, specific detailed timings for activities that were happening and information about optional additional opportunities. A tension in providing this information is the rapid pace of change in clinical environments and delays in confirming student numbers due to ill-health or assessment procedures, which impede timely timetable releases. A potential solution is the release of a general framework well in advance of the student experience, which could be superseded by a detailed and individually tailored timetable as the placement approaches. This strategy worked well at a trial site by the principal investigator.

Contact Point

As well as having an individual to navigate towards, the students benefited from having a specific 'contact person' who had formal educational and clinical roles during placement. Spanning these two spheres meant greater understanding of the pressures facing students and the ability to organically troubleshoot challenges during placements. Notably, the number of formal educational positions offered to junior doctors in the NHS has exploded in recent years (Couchman et al., 2022, Baryeh, 2022), but there are many potential iterations of this role which could also fulfil students' needs. Indeed, this is already a point of consideration for medical schools where the GMC in 2022 mandated designated clinical and educational supervisors for students (General Medical Council, 2022).

Travel arrangements

Finally, in organising timetables, one aspect that can be neglected is the practical arrangements for students attending placement. This may be considered outside the scope of influence or responsibility for programme organisers. However, challenges relating to parking, public transport and lift-sharing significantly influenced student experiences in this study and impacted on engagement. At the very least, timetable planners should be mindful of ensuring that timetabled activities are feasibly and safely reached by available transport mechanisms. Moreover, where possible, travel arrangements could be facilitated to alleviate this source of student stress, for example through funding travel expenses or arranging transportation.

10.2.2 The importance of first impressions

Physical orientation

The initial experience on entering clinical placements was a critical determinant of subsequent engagement. Reflecting the importance of first impressions, it may be revelatory for medical educators to visit placement sites and experience first-hand the nature of the 'workplace climate' as experienced by students in different areas. Specialist areas such as surgery and critical care were particularly challenging for students to navigate. Many programmes will already have formal orientation processes and aids such as 'student handbooks.' However, this study suggests that students rarely consulted or were aware of the handbook, despite significant signposting. Educators may need to trial a variety of media and formats to find an orientation process that effectively facilitates student navigation. One intervention trialled by the study site was a 'facilitated shift' which was well received by students. The author has also included specific reporting guidance and photographs in a welcome email to students which dramatically improved students' orientation and time-keeping on their first day.

Welcome and introduction

Another area of focus in managing 'first impressions' is the quality of welcome offered to students. Being expected on arrival into an area was greatly significant to students. Efforts to raise awareness of clinical staff to the names and nature of students circulating through busy areas may be challenging but important work. Strategies may include dissemination of student photographs, regular reminders of expected students through a variety of media and events which build relationships between programme organisers and those working with students 'on the ground.' Related to this was the importance of a quality 'welcome' to students. This may be facilitated by embedding students into practices of making introductions already existent in clinical areas. This has been an area lacking in clinical practice, hence the need for adaptations such as the 'surgical pause' (WHO, 2009). Exchanging names, and being referred to by name is a powerful yet simple mechanism for promoting social cohesion and effective clinical practice as recognised in the literature and through the 'hello my name is' campaign (Douglas et al., 2021, Kmietowicz, 2015,

Grother et al., 2019, Bobb et al., 2018). Informed by this study has been the introduction of student name badges at the investigation site which has been transformative according to student feedback. Again, GMC guidance mandates site preparation for student arrival and introductions during student orientation (General Medical Council, 2022).

10.2.3 Communications and connections

Supporting peer connections and managing student numbers

Peer and near-peer relations were an especially powerful resource for students in navigating placement experiences. Recognising that students already used informal mechanisms to share knowledge and expertise, initiatives to capitalise this could be invaluable. Opportunities include social events, near-peer developed resources, student-led orientation and making student timetables collectively available. Furthermore, decisions about student allocation should be carefully considered, where student numbers can be a source of tension as well as support in managing learning opportunities.

Managing communications

The communication and relational distance between universities and students whilst they engage in clinical placements is increasingly recognised (Stoffels et al., 2023). Notwithstanding this, the participants of this study described feeling overwhelmed by the volume and content of emails from the university and communications relating to behavioural correction were particularly poorly received. Where considering the medium, timing and message behind communications is an imperative, it may be useful to consider information that is valuable to students. In response to this study, all communications from the university to students are now channelled through a student leader who collates responses which are then modified and sent at designated times in order to control tone and narrative.

Moreover, this study suggests that students regularly engaged in 'ratings and reviews' of their experiences which informed expectation management and behaviour on placements. Educators may wish to capitalise on this social exchange and formalise these processes, which could serve a dual function of getting dynamic

insights into students experiences as well as establishing pathways for productive reciprocal dialogue with students.

10.2.4 Supporting basic needs and physical integration

Meeting emotional and physical needs

This study points to the significance of emotional experience in determining student engagement. Negative emotions such as anxiety and nervousness led to avoidance, withdrawal and deferral of experiences. Physical discomfort such as hunger and fatigue also negatively impacted engagement. The recognition of the need to promote and support student wellbeing has greatly increased in recent years but has not always translated into clinical environments (Dyrbye et al., 2019). Where staff relations are critical to student wellbeing, faculty development around 'psychological safety' may be invaluable (McClintock et al., 2022). Moreover, adaptations to clinical environments to promote physical wellbeing may also be required, as advocated by staff groups (BMA, 2018).

Physical spaces and representations

This thesis emphasises the importance of the physical spaces and materials in facilitating student participation with practice. Lacking a space to occupy, feeling like an obstruction, being repeatedly diverted or being 'demoted' from occupying staff physical areas can significantly contribute to student disconnection and disengagement. Recognising that space is contested in clinical environments, making dedicated spaces for students that integrate them with clinical activity can be highly effective. This study identified that interventions such as having a dedicated clinic room for students promoted student engagement, whereas being asked to give up their seats in deference to staff members had the opposite effect. Organisers should also be mindful of the physical areas that students can gravitate to – such as libraries and student common rooms – and how occupation in these spaces might be inadvertently hindering student adoption into clinical teams and social culture.

Regarding the subject of physical aids for student integration, student dress codes have been a controversial area of practice including at the study setting (Ahmed et al., 2020, Duncan, 2021, Cuesta-Briand et al., 2014). Students in this study found having their own uniform and student lanyards with ID badges beneficial in

promoting their identification and fostered a sense of inclusion. Interacting with 'real' physical support aids to working, such as the patient notes, also fostered inclusion. An area of focus for curriculum organisers could be to ensure that students have the IT access and training to interact with workplace tools, something which is also advocated by the GMC (General Medical Council, 2022).

Motivational insights and Curricular Design

Introduction

Understanding students' motivational drivers gives insight into aspects of curriculum design and practice where adaptations could be targeted to support student engagement. This includes areas to move away from, areas of opportunity and reflections on actual practice in relation to curriculum aspirations.

Self-directed and self-regulated learning

Firstly, there is an emphasis within curricula on self-directed and self-regulated learning. The onus may be put on the student to 'make the most' of their experiences, and identify and drive their own engagement. Although independent practice was observed in this study, the reliance on external mediation and absence of student planning/goal setting renders this expectation seemingly unrealistic for students engaging in the workplace. This study suggests students require significant direction as to what they should be aiming to achieve, especially if that goes beyond fulfilling assessment requirements. The common practice of staff members asking students what they hope to achieve from their experience can lead to disengagement. Part of this can be explained by the student aspiration to 'keep the peace' and 'not be a burden'. Staff should consider whether the student feels unable to voice their agenda, or perhaps more commonly whether they have no agenda and would benefit from specific direction. The goals identified by our students were generally related to becoming a junior doctor and passing their exams. One recommendation is to work with students to meet these goals by making explicit how particular opportunities might help progress them. For example, the suggestion that a student engage in a telephone referral might be better received if linked with the understanding that this task is commonly encountered by junior doctors.

Motivation through participation and 'service provision'

Yet, identifying appropriate opportunities that will promote student engagement can be challenging. A sense of contribution or 'helping' powerfully motivated students but could be countered by a reluctance to engage in 'service provision', where a student primarily identifies as a 'learner' rather than a worker. Thus, engaging students in administrative tasks might promote their sense of inclusion in the workplace, but they may be disinclined to do this. Notions of which opportunities confer learning for students can also be misleading and counter to a participatory apprenticeship model of learning. A key example is in the recent GMC guidance which advocates that supervisors should "give students the chance to get the most out of their placement experience and not just meet service need. For example, allowing students personal study time if there aren't many learning opportunities at that time" page 15 (General Medical Council, 2022). The stance of this thesis is that situations devoid of learning opportunities will be rare where the latter are broadly conceptualised, and that student involvement in whatever clinical activity is occurring should be encouraged. Longitudinal integrated clerkships have been transformative at the study site in promoting the development of a meaningful student role on placement.

Facilitators and inhibitors of student engagement

Recognising the common practice of 'avoidance,' where students can be both motivated or demotivated by challenging situations and gaps in knowledge, educators may wish to consider 'carrot' and 'stick' strategies to encourage participation. Punishment and negative consequences for disengagement may encourage students to engage in tasks that they are disinterested in, for example completing a discharge letter because this is mandated, or monitors on attendance. Rewards could come through processes which recognise and celebrate student high performance such as formal commendation processes, such as the 'GREATix' system (GREAT-ix.org, 2024, Edwards, 2020). For staff on the ground, students may be willing to engage in a task in exchange for a formal educational opportunity. Moreover, a common motivation for students was completing procedural skills, so offering opportunities in this domain may be an effective stimulus for students to engage with clinical workloads. In all cases, ensuring students have the skills and support to engage in a task will likely reduce anxiety and increase confidence and

thus promote engagement. Where students are motivated by social interaction, chatting with students on a personal level and gaining insight into their private lives could serve a dual function of motivating students and establishing external drivers significant in guiding behaviour.

Staff-student interactions and motivation

In this study the students exhibited a number of traits which staff members might find demotivating. Negative attitudes to work included a tendency towards complaining, a 'can't do' attitude, and being generally inert and directionless. Staff members also exhibited a myriad of negative behaviour towards students which were significantly demotivating. Programme designers should be aware of this tension and be realistic in their efforts to promote staff-student engagement and cohesion. An important question is the factors motivating staff to engage but this goes beyond the scope of this study. Certainly, given the critical role staff members play in modulating student activity, programme educators should seek to understand the pressures facing clinical staff and explore potential drivers for staff behaviour.

Assessment driven learning

Finally, educators should be cognisant of how assessment drives student engagement and the potential unintended consequences of assessment design on student behaviour. A notable example in this study was students engaging with patients according to exam-formats for example under strict time controls. The student 'log book' where it focused on quantitative targets, may have exacerbated the student tendency to have a target threshold for experiences. Where clinically relevant experiences are not included in specific assessment mechanisms, these are likely to be neglected. Moreover, staff members could reinforce this restrictive behaviour, where assessment structures were used to drive the agenda for learning. Novel practices of assessment which focus on student reflection and growth such as 'programmatic assessment' provide strategies to promote assessment *for* learning, though implementing these changes are not without their challenges (Schuwirth and Van der Vleuten, 2011, Roberts et al., 2022, Heeneman et al., 2015). Such assessment strategies are now being implemented at the study site.

10.3 Social dynamics and individual points of reflection

10.3.1 Introduction

This study provided insight into the complex social dynamics between staff and students and amongst students which significantly influenced student engagement. Firstly, this section provides recommendations for supporting peer interactions. Secondly, student patterns of behaviour are examined, with points of reflection for staff members managing the consequences of these. Finally, a series of prompts are provided for staff members to examine where they may be inadvertently reinforcing negative engagement behaviours.

10.3.2 Peer interactions

Understanding interactions and implications

Peer interactions as uncovered by this study were complex and wide reaching and beyond the traditional focus of 'peer-to-peer' learning. Students may be living with other students, sharing transport arrangements with other students, have friendships within a placement cohort or lack friendships. Complex rules and territories guided who is entitled to what experience, which staff members may inadvertently circumvent. The common practice of students sharing narratives of their experiences can quickly destroy the reputation of a clinical area or staff member. Practices of disengagement could be infectious, with evidence of 'group think.' Moreover, what a student engages with on placement may be significantly determined by what their peer colleague is doing – or what a peer might find impressive.

Capitalising on peer interactions for learning gain

Medical educators would be wise to be mindful of these dynamics. For example, in allocating students to clinical areas, it may significantly alter student engagement practices if placed in a location alone, with someone they know or with a student who is a 'stranger' to them. In this study, students were randomly allocated to smaller groups which persisted throughout the year, facilitating social relationships to be formed. Indeed, knowledge of existing social connections within a peer group might lead an educator to 'hand pick' student groupings to promote positive practices.

Moreover, understanding the ‘reputational stakes’ of the peer grapevine, staff members and educators may wish to frequently ‘check in’ regarding students’ perceptions of their experience on a given day. It may be beneficial to mitigate early any negative misunderstandings lest they become fodder for the drive home. Regardless, developing an understanding of peer culture according to generation (Hill et al., 2018, Shorey et al., 2021) or within a specific area provides essential context for plans to implement change.

10.3.3 Staff interactions

Asking questions

Given their reliance on staff members in clinical environments, the study participants demonstrated numerous behaviours intended to secure staff time and attention. One mechanism was to interrupt the clinical workflow by asking questions. Staff members may wish to reflect upon the intention behind the questions which may be a genuine query, a cry for attention, an effort to engage in activity or a device for the student to promote their own knowledge. Understanding the nature of student questions may help facilitate their engagement through addressing underlying challenges, for example perhaps the student has not been made to feel psychologically safe, is being ignored or is looking for opportunities to become more involved. Furthermore, where the ‘ward round’ forms the cornerstone of educational opportunities for the student, it may be worth considering novel ways of the student engaging rather than the traditional pattern of them following and asking the occasional question. The literature points to some novel ideas, (Collett et al., 2022, O’Connor, 2019, Reece and Klaber, 2012) but this is also an area for further research.

Pretending or faking specialty interests

Another device utilised by students is ‘faking’ an interest in a specialty to forge relationships or seek favour with staff members. Staff members – particularly those with authority – should reflect on their relationships with students, and their potential biases towards and preferential treatment towards certain student groups. Is a career interest in a specialty essential to learning from a clinical placement experience? Which student groups may be neglected because staff members do not

have a natural affinity with them? Though this study did not focus on student experience relating to demographic features, there was a suggestion of student differential experience according to gender and ethnicity. It may be beneficial for everyone working in educational spheres to question their practice in relation to reinforcing specialty stereotypes and particular 'specialty bashing' (Allsopp et al., 2020, Parekh et al., 2021) This study points towards this kind of 'tribalism' (Braithwaite et al., 2016), being unhelpful for student engagement. It can also be adopted early by students, who even in their medical studies can discount experiences if they do not align with their specialty preference.

10.3.4 Near-peers and cycles of behaviour

Finally, this study suggests that student behaviour is significantly impacted by their 'near-peers' in clinical environments. Recognising that final year student participants will be the next year's 'near-peers', it is easy to see how unhelpful engagement practices and norms may be perpetuated through this cycle. An awareness of this transition may, if nothing else, provoke thought about where interventions could or should be targeted. Perhaps challenging and supporting the behaviour of near-peers could be most effective in changing what students could expect from placements given the wide-ranging influence of this group. Worth reflecting on also is the GMC intention that student learning on placement be senior led (General Medical Council, 2022).

10.3.5 Points of reflections for staff: being aware of negative practice you may be inadvertently reinforcing

Introduction

The section on 'navigation norms' and student 'patterns of behaviour' provides insight into specific student practices which promote disengagement. In some cases, staff practices and patterns of behaviour directly influenced these. The following section serves as a prompt to staff members or those interested in education to consider negative practice they may be inadvertently reinforcing.

Telling/inviting students to leave: A general pattern of behaviour was for students to leave the clinical environment early. Equally, participants describe a common

practice of staff members telling or inviting them to do so. As a staff member, consider whether it is in the student's best interests to leave the clinical environment. Be aware that once told to leave, the student may find it hard to remain, particularly if they interpret this as no longer being welcome.

Selective patient engagement: The students were highly selective in the patients they chose to engage with. However, often they describe staff members as the ones directing them towards particular patient groups. Staff members may wish to challenge themselves and students if they enquire about if there are any 'good' patients to see, and consider if patient selection is serving to promote holistic care. For example, students are frequently directed towards patients with pathology or clear clinical signs, or those who are 'nice,' or easy to talk to. Could the student equally benefit from engaging with a confused patient, a disgruntled patient, or a 'poor historian,' or a patient without pathology to examine? The worrying trend of trainee doctors lacking confidence in talking to patients with learning difficulties provides one point of reflection (Duggan et al., 2009).

Task hierarchies: The students demonstrated a specific value system when it came to tasks, where clinical procedures were generally high-ranking and administrative tasks low-ranking. As a staff member, consider whether you are contributing to a perceived hierarchy of tasks and avoidance of potentially valuable opportunities. Could something you consider 'boring' be of benefit to the student, or promote participation in the clinical team?

Censoring activities: There appeared to be boundaries to the student role within clinical environments. Consider whether something is really '**not**' for the student and how to promote inclusion within your clinical environment. Could the student participate in an activity with the right training and support?

Student blindness and hierarchy: A strong narrative within the student group was of invisibility or being ignored in clinical environments or treated as an intruder. Problematic behaviours include not referring to the student by name, avoiding eye contact, positioning the student on the periphery of groups, or delegating responsibility for the student to someone else. Consider whether this is something you observe in your clinical area, or perhaps a behaviour you unknowingly engage in.

Nothing to do: One of the student conceptualisations of activity was that there was ‘nothing to do.’ Consider challenging this narrative as a staff member – is there really ‘nothing for students’? What opportunities might be available at different levels of clinical activity?

Presenteeism: One of the outcomes of engaging with activity for students was simply to be ‘present’. A thought-provoking question is whether as a staff member, you see your role as an educator to be fulfilled if the student is present but non-participating? A classic example is the student ignored in the corner of a clinic room.

Keeping the peace: There was a strong sense within the participant population of ‘being a burden’ and a desire to ‘keep the peace.’ Be aware of power differentials with your relationship with students and how you may be inadvertently preventing them from achieving their goals.

10.3.6 Conclusion

The social dynamics of how students navigate opportunities in clinical environments are complex. Clearly, some norms and practices are harmful to student engagement and challenging these could reap easy rewards. An understanding of students’ motivations behind their social interaction may also help educators meet students’ unvoiced needs.

10.4 Responding to feedback

10.4.1 A model of conceptualising experiences

An area which has drawn significant attention and resource from those running medical programmes has been the gathering of and responding to student feedback on their experiences. This study provides insight into how students generally evaluate their experiences according to a spectrum of ‘usefulness/helpfulness,’ ‘interest’ and the relevance to assessment. Applying this framework may be helpful in interpreting student experiences and perhaps more importantly in pre-emptively or concurrently evaluating how a student may be interpreting an experience and thus to dynamically inform changes to practice.

10.4.2 Highlighting the 'interesting' and the 'useful'

For example, educators could question where a proposed activity might sit on these spectra and what action might be taken to modify the response. The student may consider that writing a discharge letter is 'boring,' However, if you can make a case for it being helpful to the student's development, they may be more likely to want to engage. Conversely, if a student is of the opinion that there is no worth in seeing another patient with a particular condition, you may wish to highlight a particularly interesting facet of the case to pique their interest. Assessment is another area of focus, which has long been exploited by medical educators to promote student engagement ('you might want to pay attention to this as it commonly comes up in exams').

10.4.3 Valued modes of interacting

The students were also sensitive to *how* they were interacting with opportunities. For example, 'observing' had particularly negative connotations. Asking the question of what a student could actively 'do' in a particular scenario, may be transformative for engagement even if such action is not typical. Working in a specialist outpatient area, the author of this study encouraged student involvement from their first day through meeting and greeting patients and doing basic physical measurements.

10.4.4 Novelty, diagnoses and pathology

Students also have a particular interest in novel things, pathology, and making diagnoses. Educators may want to capitalise on this, with the caveat that excessively doing so may be perpetuating unhelpful patterns of engagement (see above) and be at odds with promoting holistic engagement with patients. However, this insight may help explain a student's disinterest for example in reviewing a long-standing patient on a ward who has an established diagnosis. Recognition of this dynamic has already stimulated development of novel placement types such as the 'Longitudinal Integrated Clinical Clerkships' (Hudson et al., 2017, Fuller et al., 2021). Additional research into patterns of student engagement in this complex area would be invaluable.

10.4.5 Learner identity

Finally, this study suggests that students identified as learners rather than ‘workers’ and evaluated their experiences from this perspective. This vantage is potentially problematic when introducing apprenticeship style models of placement such as the student ‘Assistantship,’ where the ‘worker’ mindset is arguably critical. Our participant cohort was very mindful that they were ‘not being paid’ and educators may need to creatively consider how to encourage activity which will be perceived as ‘service provision’ without the recompense typically received by working colleagues. This emerging attitude towards learning as exhibited by students is a potentially fruitful avenue of further research in the context of an increasingly consumeristic culture.

10.5 Conclusion

This study uncovers the inter-related processes underlying student engagement in clinical placements. Many of these dimensions are outside the typical sphere of consideration of medical educators. The previous discussion provides multiple points for reflection as well as practical suggestions for trying to influence student engagement. What is paramount is that the introduction of change is considered dynamically and iteratively with what is happening ‘on the ground.’ Recognising that students differ in their traits, beliefs, judgements and opinions, it is likely the case that ‘one size does not fit all.’ Moreover, given the significance of the relationships with staff, medical educators would benefit from fostering close relationships with those working in the field, recognising that interventions are unlikely to be effective if staff are not ‘on board’. Further research in this field will yield greater understanding of specific interventions and how these might apply to different student contexts. The following section addresses some suggested areas of study.

10.6 Recommendations for future research

This study has highlighted several future areas for potential research, some of which have already been described. The following section describes other avenues of investigation, highlighting the limitations of this investigation.

Firstly, this investigation focused predominantly on the experience of final year medical students with respect to engagement with opportunities. Study of other year

groups might yield insight into differences according to stage of training. This is particularly pertinent where this study has already identified some changes in practice according to year group.

Secondly, this study focused on one medical programme in one defined geographic area. Given the relevance of contextual influences to the phenomenon, different locations with different programmes of study may inform which aspects of the model are transferable, and which are modifiable according to local context.

Thirdly, this study focused on clinical placements of relatively short duration (maximum 6 weeks). Study of novel placement formats such as the Longitudinal Integrated Clerkships (Hudson et al., 2017) may support different patterns of student engagement, particularly where this study suggested that 'rapid rotation' was a pertinent contextual influence.

Fourthly, this study suggests the activities that are typical for students to experience on placement. Studies focusing on particularly pertinent activities such as the 'ward round' or the role of asking students questions, may yield activity-specific patterns of engagement and potential areas of intervention.

Fifthly, this study focused on engagement from the perspective of students. Given the relevance of staff-student relational dynamics on engagement, it may be fruitful to explore this dimension from the perspective of staff.

Finally, this study site used relatively traditional models of student assessment (see introduction section). Given the prominence of assessment to student patterns of engagement, the utilisation of different assessment approaches and timings may be transformative with respect to student engagement. For example, recent research suggests that the novel strategy of Programmatic Assessment, which focuses on regular formative assessment, student reflection and growth, may significantly influence student behaviour (Schuwirth and Van der Vleuten, 2011, Heeneman et al., 2015).

11. Chapter 11 - Conclusion

The aim of this study was to develop a conceptual model of the inter-related processes underlying medical students' decisions to engage with learning opportunities during clinical placements. This was an investigation rooted in clinical practice, where variable student engagement with experiences was commonly encountered, a pattern borne out in logbook and evaluative studies. Yet despite the burgeoning literature with respect to learning on clinical placements, prior to this investigation there was no unifying answer to this conundrum. Existing literature varied in quality, at times hampering transferability of findings. Moreover, where high quality work has been carried out this has too often been blinkered by a focus on specific educational phenomena or theory.

Consequently, the following study was designed paying specific heed to implicit, informal and moment-by-moment influences on student engagement with learning. Adopting a social constructivist stance, various methods were employed to understand the phenomenon and contextualise it. Addressing two research questions, both the processes and outcomes of student engagement were explored, resulting in a unifying conceptual model which can be considered the formal theory and outcome of the constructivist grounded theory approach (see Figure 42).

This over-arching conceptual model maps individual, environmental and social influences according to their effect over time. Critical time periods were the current moment, recent influences and the longstanding, with special recognition of the student tendency to look to the future and the importance of the time period on initially entering a clinical environment. With respect to the literature, some factors were already well established, some featured in the literature and were perhaps intuitively relevant but had not been applied to the phenomenon. Other factors were completely novel, and their description in this thesis illuminates aspects of the phenomenon which were important but unknown. The conceptual map which is thought to be the first of its kind appears to hold particular resonance with the participants and medical educators through the drawing together of multiple factors which can easily be mapped to narratives of student experiences.

The potential implications of this investigation are far-reaching. Firmly rooted in clinical practice as it has been from the initiation point, the findings can immediately be utilised to make sense of student experiences and the potential for implementing change to modify influences is vast. Further work needs to be done to explore which factors are amenable to change, and the mechanisms through which this can be achieved. As a starting point, using the conceptual map as a source of reflective dialogue with medical students, student leaders and educationalists may yield some immediate action points. Already this thesis has changed the practice of the principal investigator and been the source of a re-design of clinical experiences for a cohort of medical students to great effect.

12. Chapter 12 - Impact and Dissemination Plan

12.1 Introduction

This section describes how the results of the study have been disseminated so far and the plans for widening the impact of the investigation through future publication and engagement work.

12.2 Dissemination to participants

A lay version of the report will be drafted and disseminated to the study participants as part of the study protocol.

12.3 Teaching practice

A report will be generated for the study site medical school, with opportunity to present findings at local meeting. Invitation to discuss findings at the UK Medical Schools Council has been extended.

12.4 International presentations

The work has been the subject of three international presentations at the annual International Association for Medical Education (AMEE) conferences. These conferences attract over 3000 in-person delegates and are arguably the most impactful arena for presenting research in medical education. An outline of the presentations is included below, with the abstracts included in the Appendices.

- The transition from face-to-face to online data collection with medical students: a post-participation survey (Online presentation at Hybrid Conference, August 2021– Appendix C)
- Exploring student patterns of behaviour during clinical placements and the implications for supporting learning (Face to face presentation at conference in Glasgow, UK: August 2023 – Appendix O)
- How do medical students navigate learning opportunities during clinical placements? Exploring the inter-related processes underlying student engagement (Face to face presentation at conference in Basel, Switzerland: August 2024 – Appendix P)

12.5 Publications and other fora

The work has already been the subject of a peer-reviewed journal article based on the transition to online methods (Appendix D). Further dissemination in journal articles or other media is planned as outlined in Table 15. The primary aim is to maximise the impact of the findings according to four areas of focus. As well as exploring options for formal publications, more creative and informal options such as medical education podcasts, blogs and open access publishing such as MedEdPublish will be utilised where relevant.

Areas of focus for dissemination of findings in journal articles and other fora

Area	Focus	Questions/Objectives	Data	Description
1	Phase B - Day Reconstruction Questionnaire	To assimilate medical students' accounts of the activities they undertake during clinical placements in order to discern any patterns of behaviour and how these relate to learning during clinical placements.	Modified Day Reconstruction Questionnaire data (n= 34)	Insight into 'day in life of UK medical student' – activities they engage with, average length of working day, patterns of behaviour
2	Phase B – Interview data	How may medical students' patterns of behaviour during clinical placements impact upon their experiences of learning in clinical environments?	Interview and Modified Day Reconstruction Questionnaire Data (n = 18)	Exploring medical student patterns of behaviour during clinical placements and the implication for learning
3	Phase C – Focus groups	To explore medical students' interpretations of what are perceived to be significant contextual dynamics influencing how they approach and	Focus groups x 4 (n = 18)	Focus on the 'contexts' influencing medical student experiences using focus group data.

		experience clinical placements in order to develop an understanding of the relationship between context and student engagement during clinical placements.		
4	Present overall model	What are the inter-related processes relevant to medical students' implicit and explicit decision-making in relation to how they engage with informal and formal learning opportunities during clinical placements?	All data	Presenting overall model, bringing together all elements of work.

Table 15: Areas of focus for dissemination

13. Appendix A: Mapping the study protocol changes/data collection adaptations

Consistent with an iterative data-driven approach, changes to the study design and specifically the data collection strategy were made in response to the emerging findings and change in study context. These alterations occurred in parallel to the modification of the research objectives, and also took place at several additional points over the course of the investigation as part of a reflexive approach. Approval for this adaptation to the study protocol was sought from formal bodies on four occasions which are summarised in the section on ethics approvals.

The original intended research design is outlined in the diagram below (Figure 43). The most significant changes made were to the data collection strategies, both in nature and process.

Study Design: How do medical students navigate learning opportunities during clinical placements?

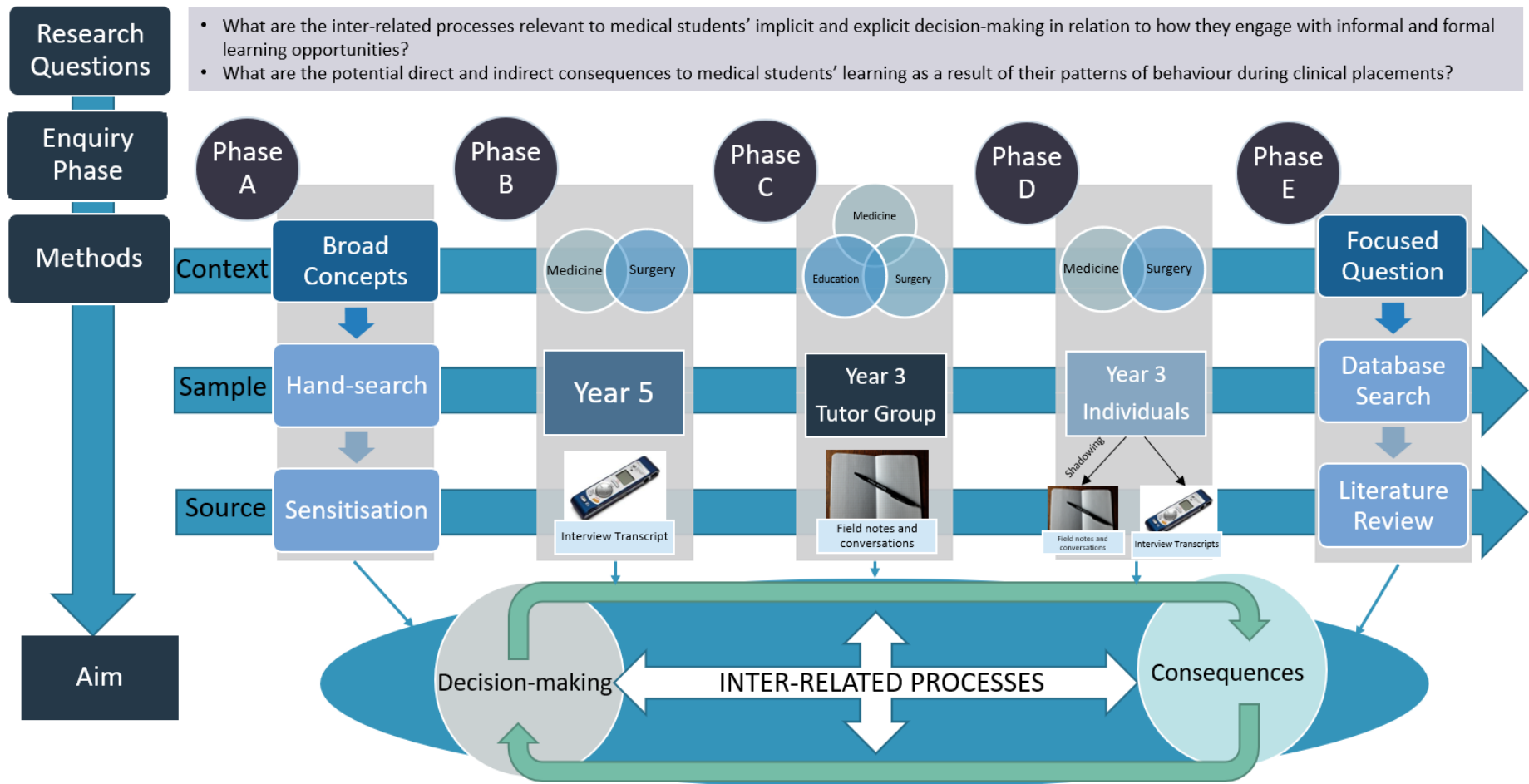


Figure 43: Original study design map

13.1 Marginal participant observation

Phases C and D were originally designed to incorporate elements of marginal participant observation including short reactive interviews. The intention was to join a cohort of Year 3 medical students and observe their experiences in both educational and clinical environments. Observation would be done as a group for Phase C and on a one-to-one basis in Phase D. Marginal participant observation was considered desirable as it would enable the principal investigator to directly observe the contexts for decision-making relating to engagement, enriching insights into the features that students may describe in interviews. It would also provide an opportunity to interrogate students' decision-making' shortly after this occurred, allowing exploration of the immediate consequences to students' learning arising from their patterns of behaviour. However, the COVID-19 pandemic led to restriction to clinical environments for non-essential staff. In educational environments, limitations to the number of people in rooms as part of social distancing made it impractical for a researcher to be present in clinical areas.

13.2 Face-to-face research

The original process of conducting the research interviews in Phase B, C and D was for this to occur face-to-face. Although online and telephone interviews were considered an option, it was rationalised that the quality of the interaction and subsequently the data would be optimised through a physical encounter. This process had to be adapted in the advent of the COVID-19 pandemic, which took effect during the first interview Phase B. Restrictions to travel, and face-to-face meetings prohibited face-to-face interactions for data collection for the remaining duration of the investigation.

13.3 Summary of changes made to data collection strategy

In light of the described restrictions, the study design and data collection methods were adapted, in order to meet the research aim. These are summarised in Table 16 below. The adaptations evolved over time and as such four separate ethics approval amendments were made. Marginal participation observation was replaced with focus groups and a more in depth-analysis of the pre-interview questionnaire to indirectly explore medical students' patterns of behaviour. The initial intention for Phase D was

for this to be a repeat of the interview process followed in Phase B to ensure conceptual saturation given the diversity of responses encountered in this Phase. However, following completion of Phase C, and the achievement of broad conceptual saturation, this was revised to be a further focus group-based data collection phase with an emphasis on member-checking the emerging conceptual model.

Phase	Planned Strategy	Changes made	Key considerations
B	Face to face interviews and pre-interview questionnaires with Year 5 students	Switch to remote data collection using emergency ethics provisions. (n= 3 videoconference, n = 1 telephone)	Enabling data collection to continue given pandemic restrictions
C	Observation of ~20 Year 3 students (one tutor group) in educational and clinical areas	Replaced with 4-6 online remote videoconference focus groups with Year 3 and Year 5 students (group size 4-6 participants based on tutor groups).	Gather data relating to contextual features and enable observation of peer group dynamics in the absence of observational data.
D	Individual observation and mini-contextual interviews with ~10 Year 3 students and semi-structured interviews and pre-interview questionnaires with ~10 Year 3 students	Initial plan for Phase D was to mirror Phase B conducting online remote interviews with a cohort of Year 5 students one year later as an additional data point (10-15 students). Laterally revised from interviews to online focus groups with 2 x groups of Year 5 students.	Ensure sampling sufficient for conceptual saturation. Opportunity to check 'transferability' of findings between similar cohorts. Priority shifted to 'member-checking' and broad overview of emerging conceptual model following completion of Phase D

Table 16: Changes made to study data collection strategy

14. Appendix B: Participant Recruitment and Retention Analysis Following Covid 19 Pandemic

14.1 Summary table of recruitment and retention

Phase of study and target group	Invited	Responded	Dropped out	Drop-outs attributed to COVID19		Took part	Response rate	COVID19 Pandemic
				Direct	Indirect			
PHASE B (Interviews)							50%	
TG1	15	10	0	N/A	N/A	10	66.7%	
Individual	5	5	0			5	100%	
TG2	15	9	6	1	5	3	20%	1 st national Lockdown
Individual	1	1	1	0	1	0	0%	
PHASE C (Focus Groups)							66.7%	
TG1	11	8	0	0	0	8	72.7%	
TG2	16	11	1	0	0	10	62.5%	
PHASE D (Member-reflexive Focus Groups)							43.5%	
TG1	23	13	3	0	0	10	43.5%	3 rd national lockdown

Table 17: Summary of recruitment and retention of participants

14.2 Recruitment and retention analysis

The highlighted figures in Table 17 represent where the COVID-19 pandemic is thought to particularly impact on participation in the study. In the midst of Phase B, a national lockdown was announced, and the students were advised of significant changes to their placement arrangements. Interviews also had to adapt and move from face to face to an option of online or telephone. At this point, having had a

healthy response to participation, there was significant drop out from students in Target Group 2. Moreover, attempting to recruit a further online participant after this point was not successful.

During Phase D is where the pandemic is also thought to have been significantly influential. Recruitment of participants moved online in the advent of the 3rd national lockdown. This saw a typical response rate of around 60% drop to nearer 40%. However, there were less drop-outs to the study, potentially because of increased stability at this time and because the focus groups were planned to be online from the outset so there were no last-minute changes to data collection processes.

14.3 Overall response rate

The overall response rate to the study is 53.4% where 46 out of a potential 86 participants took part.

15. Appendix C: The transition from face to face to online data collection with medical students: a post participation survey

15.1 Abstract of presentation at AMEE (Association of Medical Education Europe) International Conference August 27th - 30th 2021

15.1.1 Background

The use of online synchronous videoconference data collection pre-dates the COVID-19 pandemic. There is a growing literature regarding the function, scope and best practice of online qualitative methods. However, little is known about how this translates to the field of medical education, and there is a paucity of data concerning healthcare students.

15.1.2 Summary of Work

This study is a component of a grounded theory based medical education research project which transitioned from face-to-face to online qualitative data collection. The purpose was to address the following objectives:

- To develop an understanding of how the context of data collection (online versus face to face) influenced researcher-participant interaction
- To explore the barriers and facilitators for collecting rich data using video-conference techniques

The researcher kept a reflexive account throughout the investigation. An anonymous online questionnaire was used to understand the experiences of medical student participants post-participation. Ten of the 18 online focus group participants responded and 7 of 16 online interview participants (overall response rate 50%).

15.1.3 Summary of Results

Research by videoconference was very well received by medical student participants. Those with face-to-face experience considered the videoconference experience comparable and even preferable. The majority of participants (17/18) said they would take part in similar sessions again. Key themes of the free text analysis were logistical benefits and challenges, changes to conversational

dynamics and the conditions for success. The researcher found the online videoconference interviews analogous to the face-to-face interviews, yielding rich qualitative data. Additional measures were required to optimise researcher-participant rapport.

15.1.4 Discussion and Conclusions

The survey findings were consistent with previous studies using online video-conference data collection in terms of widening access, convenience benefits, internet-related difficulties and communication challenges. The researcher experience supports existing evidence that online videoconference techniques can yield rich qualitative data.

15.1.5 Take Home Messages

Remote video-conference online focus groups and interviews are an acceptable means of engaging in medical education research for medical student participants and were considered preferable for some respondents.

Medical education researchers can have confidence that online video-conference mechanisms can replace face-to-face data collection strategies where adaptations are in place to support researcher-participant rapport.

16. Appendix D: Peer-reviewed Publication



Medical Teacher



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Twelve tips for conducting medical education research via videoconference

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TWELVE TIPS



Twelve tips for conducting medical education research via videoconference

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ABSTRACT

The demand for current practical advice in how to conduct research by videoconference is internationally recognised. Many researchers in medical education are transitioning to using online methods for the first time, through design or necessity. This paper aims to provide practical advice on utilising videoconference technology for research, from design to execution. The tips include how to manage important elements such as ethics approval, online etiquette, contingency planning, technology management, and data capture. Recommendations include how to promote participant engagement with online data collection methods, in some cases paralleling the literature around synchronous online learning. The tried and tested tips have been developed by the authors based on their research experience, a literature review and the results of a post-participation survey of medical students on their experiences engaging in research online via videoconference.

KEYWORDS

Medical education research;
e-learning/computers;
trends; methods; general

Introduction

Since the advent of the digital revolution, researchers have been using online methods to conduct health, social, and educational research. Accompanying these studies is a growing literature on the risks, benefits, and practical considerations for conducting research online (Mann and Stewart 2000; Chen and Hall 2004). However, the rate of technological development and cultural shifts can rapidly overtake existing wisdom. In particular, the Covid-19 pandemic has prompted dramatic alterations in engagement with online videoconference technology and increasingly sophisticated options within a multitude of platforms (Themelis and Sime 2020; Hantrais et al. 2021; Uniphore 2021). Researchers new to online methods are re-purposing face-to-face research designs or choosing to adopt videoconference methods for the first time (National Institutes of Health 2020; Health Research Authority 2021; Varma et al. 2021). There is an imperative to understand how best to apply online videoconference methods utilising the available technology in research involving populations experiencing significant shifts in the culture and practice of learning. Whilst the literature around best practice for synchronous learning online is flourishing (Dedeilia et al. 2020; Castro et al. 2021; Khan et al. 2021), the same cannot be said for conducting qualitative research via videoconference. This article offers practical advice for medical educators considering adopting research using videoconference methods. We base our recommendations on our experience as researchers using these methods, our recent research findings of a post-participation survey of medical students participating in online videoconference research

(Osborne et al. 2021) and a review of the published literature.

Tip 1

Structure your encounters differently with smaller focus groups and shorter sessions

A pervasive pitfall for researchers transitioning from face-to-face to the synchronous online environment has been the failure to redesign sessions to account for altered dynamic of videoconference meetings. Important structural considerations for online research encounters when conducting focus groups are the size, structure, and duration of sessions, all of which we advocate should be subject to limitation, despite the expansive possibilities offered by virtual technologies.

Group size: Although there is no clear consensus of the ideal size of focus groups, the accepted practice for face-to-face meetings is a target group size of approximately 6–12 participants (Stalmeijer et al. 2014; Robson and McCartan 2016). In comparison, early adopters of online research advocate for relatively smaller group sizes for online focus groups; a recommendation arising from empirical findings of the challenges of moderating larger group sizes and reduced interaction when participant visibility is compromised (Fox 2007; Moore et al. 2015; Lobe 2017). Adopting Lobe's recommendation of focus group sizes of 4–6 participants (Lobe 2017), this smaller group size was considered favourable by medical students taking part in online focus groups as confirmed in our post-participant survey (Osborne et al. 2021).

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Potential pitfalls with videoconferencing	Potential solutions
Poor internet connection	- Ask if a participant can easily move to a different environment - Turn off investigator camera/participant camera/both to reduce data usage
Unclear audio	- Instruct or train participants in advance on the use of headsets, for example in Participant Information Sheets - During the videoconference ask if the participant has a headset they could use, for example from a mobile phone
Background noise/feedback	- Ask participants to mute when not talking (see also Tip 7)
Participant joins a focus group late/misses the consent process	- Ask the second facilitator to go through the consent process with the late arrival in a break-out room - Pause the focus group to recap consent for the late individual - Include in consent process that latecomers will not be accepted
Participant video camera not working/frozen	- Consider whether to proceed with interview/focus group with audio alone or reschedule (see also Tip 6) - Interviewer keeps their camera on and continues to interact with participant conversationally e.g. looking directly at webcam
Technological failure leads to videoconference unexpectedly stopping	- In the introduction outline the expected process in the case of call failure, for example details for re-joining - Obtain adequate contact details of participants and consent to contact them via alternative means e.g. by telephone
Failure of videoconference recording/capture	- Consider having a back up means of recording the videoconference e.g. Dictaphone (interviewer headset will need to be removed)

Figure 1. An outline of the potential pitfalls of collecting data via synchronous online videoconference meeting and suggested solutions for troubleshooting.

Session structure and duration: 'Zoom fatigue' and the struggle to engage for extended periods with online videoconference meetings is a well-recognised phenomenon (Nesher Shoshan and Wehrt 2021). Paralleling face to face interactions, the ideal duration of your online videoconference focus group or interview will be dependent on the participants, subject matter, and scheduled activities (Stalmeijer et al. 2014; Robson and McCartan 2016). In the author's study, participants were observably restless after 30 minutes of uninterrupted screen interaction in focus groups scheduled for one hour. Concurrent with established teaching practice, we advocate efficient structuring of videoconference interactions, incorporating regular breaks and off-screen activity for lengthier sessions (see also Tip 9) (Pacheco 2020; Smeraglio et al. 2020; Khan et al. 2021).

Tip 2

Test your technology and have a clear contingency plan for potential problems

Technological challenges can abound when using videoconference technology for research. An obvious but imperative exhortation is to test in advance all elements of the videoconference interaction (Lobe 2017; Smeraglio et al. 2020). The benefits of piloting intended data collection processes cannot be overstated (Bryman 2016).

Another 'must' is ensuring your participants' acquaintance with technological platforms, providing detailed instructions, training and even trial sessions where appropriate (Mann and Stewart 2000; Lobe 2017). We advocate that choice of videoconference platform should prioritise participant comfort and familiarity over specialist features. During sessions, utilising an additional facilitator solely to manage technological challenges can be beneficial (Barbour 2008; Lobe 2017; Pacheco 2020) but may be perceived as intrusive by participants. Contingency planning can also alleviate disruption. Figure 1 summarises common pitfalls with suggested solutions drawn from the authors' experience.

Tip 3

Adjust your virtual 'background' to mirror your participants to promote interviewer-participant rapport

An emerging cultural phenomenon has been the attention given to 'dressing' virtual backgrounds (Ruiz 2020). Where adornments such as bookcases and plant pots are prevalent in business and media portrayals (Hess 2020), researchers should be no less cognisant of their online presence. In the author's study (Osborne et al. 2021), the use of an official artificial background corresponded with negative participant survey responses about the perceived formality of the interaction. When the investigator mirrored the participants in

sharing their home environment, participants appeared more at ease during the interview and visible background objects became the subject of small-talk. The overall effect served to facilitate the development of rapport which can be lacking in online environments (Varma et al. 2021). Our tip would be to consider your virtual display and be mindful of potential power dynamics, particularly as these can operate differently online (Mann and Stewart 2000). An interesting personal 'mug' to sip from might facilitate conversation more than an imposing bookcase or impersonal generic display. Moreover, we hypothesise that paralleling the background 'setting' of your participant may have an 'equalising' effect, which can facilitate social interaction, as much as mirroring body language can be effective in face-to-face interactions (Iacoboni 2009).

Tip 4

Consider interviewer dress in relation to power dynamics between the researcher and participant

The impact of different dress codes in modulating researcher-participant powerplay is a subject familiar to those conducting field work or ethnographic research (Hammersley and Atkinson 2007). Particular to the online environment is the partial 'half-body' view and the need for audio-visual equipment (Varma et al. 2021). In the early stages of the authors' online research, the formal dress, hair style, and clunky headset of the investigator corresponded with participant reports of the online interactions feeling 'formal' and 'less relaxed' compared to face-to-face interactions (Osborne et al. 2021). Rapport with the participants notably improved when the interviewer mimicked the casual dress and modern in-ear headset of the participants. Accordingly, our tip is to be aware of the potential increased perceived formality of videoconference interactions and to consider interviewer dress carefully according to how you hope to modulate power-dynamics in the context of your research.

Tip 5

Get off to a good start by using waiting rooms and/or ice breakers

The beginning of videoconference meetings is notoriously awkward (Sharma 2020). Obstacles to overcome include doubt over the functioning of audio-visual technology, the sudden and staggered arrivals of participants and the absence of small talk from neighbouring participants. Some of these challenges can be counter-balanced through the careful design of your videoconference research interaction. A useful feature is the 'waiting room' or 'lobby' element of many videoconference technology platforms which gives the organiser control over who and when participants are let in to a meeting (Jayarajan 2020; Microsoft Teams 2021). As a focus group facilitator, waiting rooms enable the registering of potential participants as they arrive, allowing for mental preparation and activation of contingency plans according to your emerging group size. 'Opening the door' to all participants at the same time enables the provision of a universal welcome and opportunity to immediately acknowledge each participant by name. In the author's study (Osborne et al. 2021), starting one or two minutes past the scheduled 'start

time' was found to increase the chance of having the whole group represented from the beginning without causing anxiety to those waiting. Purposefully engaging in small talk or other ice breaker activities prior to commencing the research activity can also put your participants at ease, and should ideally be undertaken before starting recording (Barbour 2008; Sharma 2020).

Tip 6

Keep cameras on and prepare participants for this during the consent process

A professionalism conundrum familiar to online teachers is whether or not to mandate 'cameras on' during videoconference interactions (Leung et al. 2021). The emerging evidence is that this can promote engagement in online interaction (Schwenck and Pryor 2021). However, etiquette around camera use is a complex area to navigate, particularly where learners can have complex reasons for hoping to obscure their personal environments, including logistical and social considerations, which can be more acutely felt in under-represented student groups (Castelli and Sarvary 2021). From a researcher perspective, the added value of videoconference interviews as compared to telephone interviews is the additional layer of communication conferred by witnessing body language (Lobe 2017). Comparative studies suggest data richness in online videoconference focus groups is equivalent to face-to-face interactions and that the lack of visual cues in audio-only interactions can impact upon participant-participant interaction (Gothberg et al. 2013; Abrams et al. 2015). Our experience mirrored these literature findings and we concur with the recommendation from Varma et al. who advocate a 'cameras on' approach to qualitative research (Varma et al. 2021), so long as this is considered feasible for your target population. Following this intention, in our research, we took the decision to incorporate 'cameras on' and recording of interviews/focus groups as an explicit condition to participation in our study and included it as part of the formal consent process. Though this arguably could introduce bias to our sample, it did not appear to be a barrier to recruitment and eliminated awkwardness regarding expectations. Indeed, in our post-participation surveys having 'cameras on' was welcomed by participants and considered as a condition which facilitated 'equivalence' to face-to-face interactions (Osborne et al. 2021). Furthermore, capturing and keeping video footage has additional benefits in the analysis phase, where it enables revisiting subtle body language cues which are notoriously challenging to capture during face-to-face encounters (Oringderff 2004; Barbour 2008; Lobe 2017). However, there are additional ethical considerations regarding storage and management of personal data captured in video footage – see Tip 12 (Arafah 2002).

Tip 7

Try to use a 'microphones on' approach to facilitate free-flow conversation

A notable difference in videoconference conversation versus face-to-face conversation is the reliance on audiovisual

technologies such as microphones and the tendency for the need to turn these on and off to speak (Lobe 2017; Smeraglio et al. 2020). Gaffes abound surrounding the familiar 'you're on mute' refrain (Clark 2020). Aside from this embarrassment, the need to mute on and off to speak was identified as a key disruptor to conversational flow by our online focus group participants in our post-participation survey. The deliberate physical step required created an additional barrier to speaking and contributed to occasional stilted conversation and prolonged silences (Osborne et al. 2021). Varma et al. posit that the conversational dynamic may also be impacted in part due to loss of subtle non-word vocal expressions when on mute, such as asserting agreement (Varma et al. 2021). In our experience, where conditions allowed, and in particular for one-to-one interactions, having a policy of keeping microphones unmuted can facilitate more organic free-flow-conversation. Notably, this advice is in opposition with existing recommendations in the literature, where microphone-muting is advocated to preserve audio quality in recordings (Lobe 2017). A pragmatic approach is that researchers should consider utilising microphone muting judiciously dependent on the concurrent call conditions (see Figure 1).

Tip 8

Give clear instructions for the conduct of videoconference conversations, particularly in focus groups

Many of the usual cues to human conversation are lost in the videoconference environment (Mann and Stewart 2000; Varma et al. 2021). This is particularly problematic in group settings, and for focus groups which rely on analysis of participant-participant interactions (Bryman 2016). Resonant with the medical education literature, in our post-participant survey, respondents identified problems with turn-taking, knowing when to speak and the awkwardness of silences (Osborne et al. 2021; Schwenck and Pryor 2021). There does appear to be a tendency for participants to speak less in online videoconference environments, though the literature suggests data yielded by online focus groups is of equivalent richness despite reduced content (Abrams et al. 2015; Woodyatt et al. 2016; Varma et al. 2021). A solution to conversational ambiguity is to give participants clear instructions regarding desirable interaction processes, equivalent to the 'ground rules' advocated by experts in online focus groups (Lobe 2017; Varma et al. 2021). In the authors' research, we gave increasingly explicit conversational guidance to participants which notably improved communication. An example statement is included in Figure 2.

'Video conferences can feel different, but as much as possible please treat this as a normal conversation. I [the facilitator/interviewer] may ask some questions, but what is most useful to me is hearing you speak [to each other]. If someone says something you would like to respond to, please go ahead and speak – you don't need to wait to be asked. Feel free to disagree!'

Figure 2. Example instructional statement to give participants explicit instructions for how to engage in the videoconference environment.

Tip 9

Use visual aids and/or activities as part of videoconference interactions

Interview aids and focus group activities/tasks are well established assets for face-to-face data collection (Barbour 2008; Bryman 2016). These can have similar utility for online videoconference data collection if suitably adapted. Pre-interview questionnaires and focus group stimuli can be completed online either through dedicated platforms or by email. This can be asynchronous (at any time) or synchronous to an online videoconference meeting (Chen and Hall 2004). The benefits of the latter include more closely mimicking the face-to-face environment, where the researcher is on-hand to address queries and participant engagement is potentially increased in a 'captive' setting. However, this may compromise convenience to the participant and increase videoconference fatigue (Mann and Stewart 2000; Nesher Shoshan and Wehrt 2021). Providing an opportunity for participants to complete tasks 'off screen' (e.g. microphones and cameras off) can alleviate some of this pressure (Khan et al. 2021), but may be less desirable if capturing 'on screen' body language cues in response to the stimulus is important to your research objectives (Varma et al. 2021). Regardless, engaging participants in activities during online videoconference meetings is a well-recognised strategy for overcoming social barriers (May 2021; Schwenck and Pryor 2021). In the author's experience, visual stimuli and multimedia can be particularly provocative and our participants responded favourably to a 'GIF' (Graphics Interchange Format) of a koala wandering an emergency department used as an ice-breaker prior to discussing clinical environments (<https://gifgimazine.com/koala-in-hospital>) (Koala... 2022). Other options include the interactive 'white-board' facility of some platforms, sharing PowerPoint slides or diagrams or the use of polls. Inspiration can be sought from online teaching techniques to facilitate engagement (Pacheco 2020; Khan et al. 2021).

Tip 10

Utilise autogenerated captions to facilitate transcription and participant inclusion

In addition to capturing video footage of participants, a significant advantage of using the 'record' feature of videoconference platforms is the ability to download automatic 'transcriptions' based on the computer generated 'captions' from audio speech. These subtitles are optional during sessions according to your participants' needs, but are also available for download post-event. Depending on the platform used, this file takes various formats and the speech may appear disjointed or lacking punctuation. Helpfully, there are easy strategies to 'clean up' these to form the basis of a transcript. Figure 3 provides an outline of the

1. Copy and paste all text from the VTT file into Excel. Select all.
2. Do a find and replace on NOTE* and replace with a blank
3. Do a find and replace on *-* and replace with a blank
4. Then to get rid of the blank rows, do ctrl G to open the "Go to" popup. Click "Special". Select "Blanks".
5. In the Home menu of Excel, go to the "Cells" section. Click the "Delete" drop down and select "delete sheet rows".
6. Copy the text to Word, use the paste special function to copy just the text so as not to copy the text in the rows.
7. In Word: do CTRL A to select all, CTRL H to find and replace, click MORE, then under special, choose paragraph mark, then replace all with a 'space'
8. Your data is now ready for editing.

Figure 3. Stepwise process for preparing autocaption files from Microsoft Stream recordings for transcription. Adapted from a Microsoft Stream Forum Recommendation (Wildman 2020).

process for working with Video Text Track (VTT) files from Microsoft Stream. An important caveat is that the ability to download caption files may vary according to platform or security settings within your institute. Anecdotal evidence also suggests auto-captions can vary in their accuracy according to language, regional dialect, and even the gender of participants. Piloting the process is invaluable (see Tip 2) and ultimately may guide choice of videoconferencing platform.

Tip 11

Videoconferencing can connect disparate or previously un-reached groups, but beware of retention issues and the challenge of group heterogeneity in socially strained online environments

A significant advantage of utilising videoconference methods is the ability to reach and bring together participants from populations that might not have been able to connect face to face for example through geographic or sampling restrictions (Oringderff 2004). Yet even from a widened pool of potential participants, problems of recruitment and retention of participants are if anything exacerbated online. Over-recruiting participants is generally recommended (Lobe 2017) and Williams and Kate note that capitalising on existing social groups is 'by far the most common and successful way of recruiting participants' (Williams and Kate 2004). Indeed, group composition is particularly important in the design of online focus groups considering the additional stressors posed by online environments (Nesher Shoshan and Wehrt 2021). Recognising that opting for focus group homogeneity versus heterogeneity will depend on your study aims (Robson and McCartan 2016). Resonant with Mann and Stewart, our experience was that the most successful focus groups capitalised on existing social networks where these were accessible (Mann and Stewart 2000; Osborne et al. 2021).

Tip 12

Recognise and address the ethical differences of undertaking online videoconference research

Recognising there are core ethical principles pervasive to all research, online videoconference environments require special consideration particularly relating to participant confidentiality, anonymity and informed consent (Ess 2004;

Lobe 2017). Importantly, whilst there are numerous benefits to a 'cameras on' approach to data collections (see Tip 6), video recordings are inherently non-anonymous and as such ethical regulatory bodies can mandate additional safeguards to management of this personal data (Arafeh 2002). Additionally, commonly used platforms such as Microsoft Teams can automatically make recordings available to all participants in a 'meeting'. Processes therefore need to be in place to avoid data breaches, such as by immediately removing/restricting access to video recordings in fora (Lobe 2017). The online environment also moves the location of interactions into the participants' private environments and can lead to intimate aspects of an individual's personal life being exposed (Leung et al. 2021). In the authors' research (Osborne et al. 2021), a challenge to confidentiality was the presence of personal photographs in unobscured backgrounds (see Tip 3). Subjects of medical education research also frequently live in shared accommodation necessitating stringent consent processes to ensure the confidentiality of participants and household members who may otherwise be unwittingly captured on screen (Castelli and Sarvary 2021). Our research process explicitly cited the need to join from a private environment, but these boundaries came close to compromise at times during the videoconference process and needed active monitoring and management. Lobe advise that consent should be written and taken in advance, for example by email, and that aspects such as revealing your personal background should be explicitly referenced in the consent process to protect participant confidentiality and re-iterated at each stage of the consent process (Lobe 2017).

Conclusions

Online videoconference technologies are a useful and increasingly utilised strategy for managing data collection for medical education research. Having the ability and technology to conduct interviews and focus groups on-line rather than face-to-face can aid with recruitment and inclusivity of participants, for example, geographically dispersed participants, participants who have different rota patterns, or participants with disabilities who may otherwise find it difficult to attend interviews and focus groups in person. Transitioning from face-to-face to online methods requires adaptation and there are several strategies that can facilitate the process. To optimise participant engagement, researchers should be attentive to their online presence, session structure and the altered power-dynamics in online videoconference settings.

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17. Appendix E: Demographic Questionnaire

Participant Identification No.:

As part of this research project, we would like to be mindful of demographic factors that may influence the experiences of medical students during clinical placements. This is because evidence from previous research suggests these may be important. If you are willing, we would be grateful if you could provide the following information.

Question One: How old are you?

☐ 18-24	☐ 25-29	☐ 30-34	☐ 35-39	☐ 40-44
☐ 45-49	☐ 50-54	☐ 55-59	☐ 60-64	☐ 65+

Question Two: I would describe my gender as:

- ☐ Male
- ☐ Female
- ☐ Other. Please describe_____

Question Three: I entered the MBBS course as a:

- ☐ Graduate (any student with previous degree not just those on A100 course)
- ☐ Undergraduate
- ☐ Other. Please describe_____

Question Four: With regards to my student status, I consider myself to be studying abroad as an International/EU student:

- ☐ True
- ☐ False

Question Five: I was part of the PARTNERS widening access to medicine programme:

- ☐ True
- ☐ False
- ☐ Prefer not to say

Question Six: I would describe my ethnic group as*:

White

- ☐ English/Welsh/Scottish/Northern Irish/ British
- ☐ Irish
- ☐ Gypsy or Irish Traveller
- ☐ Any other White background, please describe _____

Mixed/Multiple ethnic groups:

- ☐ White and Black Caribbean
- ☐ White and Black African
- ☐ White and Asian
- ☐ Any other Mixed/Multiple ethnic background, please describe _____

Asian/Asian British

- ☐ Indian
- ☐ Pakistani
- ☐ Bangladeshi
- ☐ Chinese
- ☐ Any other Asian background, please describe _____

Black/African/Caribbean/Black British

- ☐ African
- ☐ Caribbean
- ☐ Any other Black/African/Caribbean background, please describe _____

Other ethnic group

- ☐ Arab
- ☐ Any other ethnic group, please describe _____

18. Appendix F: Focused Literature Review Processes

18.1 Search Terms

A: Individuals/population	B: Learning Type
Medical student*.mp or medical students/ or 'students of medicine'	'workplace*' or workplace/ (exploded) or 'work place* adj3 learn*' or 'work place*adj3 educat*'
Medical undergraduate*.mp or medical education undergraduate* or 'undergraduate medical education' or education, medical, undergraduate/	'experience-based learn*' or 'experience based learn*' or 'exbl'
Surgical undergraduate*.mp	'practice* learn*'
Clerkship*.mp or clinical clerkship/ or 'clinic* adj3 clerk*'.mp	self-direct* learn*.mp' or 'SDL.mp'
Clinical clerk.mp or clinical clerks.mp	'self-regulat* learn*.mp' or 'SRL.mp'
Preceptorship*.mp or preceptorship/	Clinic* learn*
Assistantship*.mp	Informal learn*
Clinic* placement*	Peer* adj3 learn* or 'peer group/ exploded'
Clinic* attachment*	Learn* adj3 'near peer*' or learn adj3 'near-peer*'
Clinic* rotation*	Learn* adj5 placement*
	Learn* adj5 attachment*
	Learn* adj5 clinic* rotation*
	Learn* adj5 ward*
	Learn* adj5 primary care
	Learn* adj5 general practice*
	Learn* adj5 GP

Table 18: Search terms for literature review

Search Strategy

The following search terms (A and B) were combined in the database EMBASE.

18.2 Inclusion and exclusion Criteria

18.2.1 Inclusion criteria:

Articles addressing medical student engagement, learning or behaviour whilst on clinical placements.

18.2.2 Exclusion criteria:

- Articles not in the English Language
- Articles which focus solely on evaluating an education intervention
- Articles which address a mixed cohort of participants, where the medical student group is not analysed separately

18.3 Article screening

The database EMBASE was used to conduct the search. The titles of the articles were initially screened, then the abstract and finally the full-text. Further relevant articles were identified in a snowballing technique through reference screening.

18.4 Prisma diagram

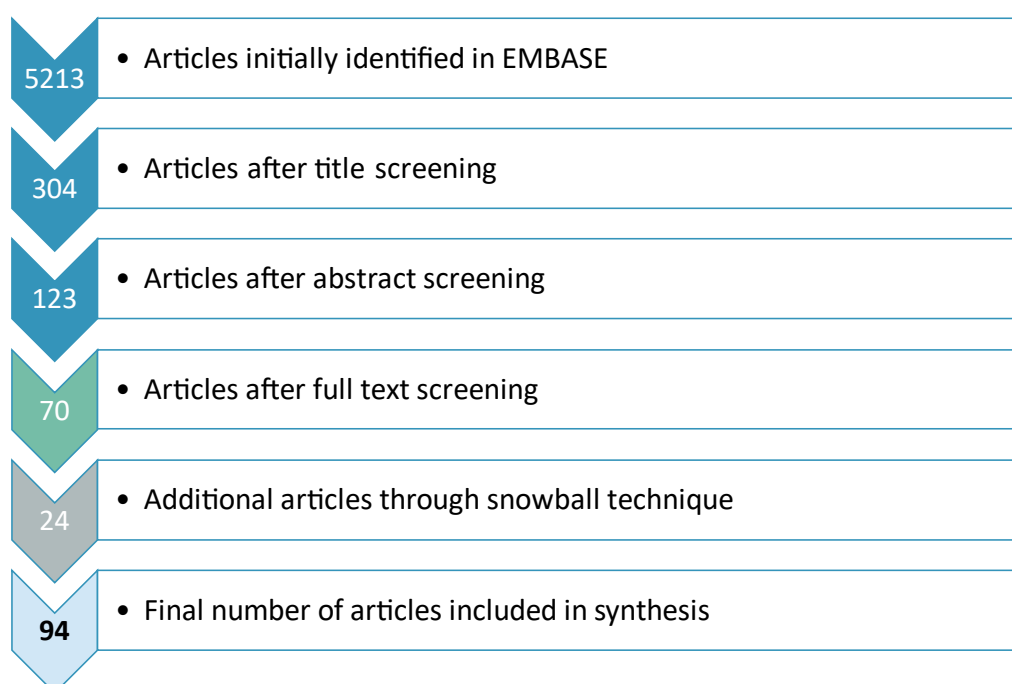


Figure 44: Article screening process

19. Appendix G: Health Research Authority Ethics Approval



Dr Fiona Osborne
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NE29 8NH

Email: hra.approval@nhs.net
HCRW.approvals@wales.nhs.uk

19 December 2019

Dear Dr Osborne

**HRA and Health and Care
Research Wales (HCRW)
Approval Letter**

Study title: How do medical students navigate learning opportunities during their clinical placements?
Exploring the inter-related processes underlying medical students' decisions to engage with learning opportunities in the workplace.

IRAS project ID: 273481

Protocol number: N/A

Sponsor Northumbria Healthcare NHS Trust

I am pleased to confirm that [HRA and Health and Care Research Wales \(HCRW\) Approval](#) has been given for the above referenced study, on the basis described in the application form, protocol, supporting documentation and any clarifications received. You should not expect to receive anything further relating to this application.

Please now work with participating NHS organisations to confirm capacity and capability, [in line with the instructions provided in the "Information to support study set up" section towards the end of this letter.](#)

How should I work with participating NHS/HSC organisations in Northern Ireland and Scotland?

HRA and HCRW Approval does not apply to NHS/HSC organisations within Northern Ireland and Scotland.

If you indicated in your IRAS form that you do have participating organisations in either of these devolved administrations, the final document set and the study wide governance report

(including this letter) have been sent to the coordinating centre of each participating nation. The relevant national coordinating function/s will contact you as appropriate.

Please see [IRAS Help](#) for information on working with NHS/HSC organisations in Northern Ireland and Scotland.

How should I work with participating non-NHS organisations?

HRA and HCRW Approval does not apply to non-NHS organisations. You should work with your non-NHS organisations to [obtain local agreement](#) in accordance with their procedures.

What are my notification responsibilities during the study?

The "[After HRA Approval – guidance for sponsors and investigators](#)" document on the HRA website gives detailed guidance on reporting expectations for studies with HRA and HCRW Approval, including:

- Registration of Research
- Notifying amendments
- Notifying the end of the study

The [HRA website](#) also provides guidance on these topics and is updated in the light of changes in reporting expectations or procedures.

Who should I contact for further information?

Please do not hesitate to contact me for assistance with this application. My contact details are below.

Your IRAS project ID is 273481. Please quote this on all correspondence.

Yours sincerely,
Kathryn Murray

Approvals Specialist

Email: hra.approval@nhs.net

Copy to: Mrs Peta Heslop, Northumbria Healthcare NHS Trust

20. Appendix H: Interview Topic Guide

20.1 Amendments to topic guide

The amendments made to the topic guide on an iterative basis are highlighted.

20.2 Introduction and Consent

- Reminder of main researcher role and name
- Explain the purpose of the research investigation and the role of the questionnaire and interview as part of this
- Explain the purpose of the Day Reconstruction Method (DRM). Emphasise that capturing all activities is more important than remembering the exact time frame.
- Re-iterate the nature of confidentiality and presence of recording equipment
- Address any final questions/concerns
- Complete written consent

20.3 Topic Guide

After completion of the Day Reconstruction Method (DRM), the investigator will use the following topic guide to facilitate discussion. However, the content of the interview will be tailored to the responses in the DRM questionnaire, the individual and their situation.

20.4 Exploring the previous day

Example Topic Starter Questions	Prompts
Was that a typical day for you?	-Explore typicality -Explore 'exceptions' to norm
Which of the activities listed stands out for you?	-Explore 'why' -Explore relative significance of activities (inference of value) -Encourage to describe activities in detail (where, what, who, why, start and finish) -Compare examples similarities/differences
Which of these activities did you feel most engaged with?	-Explore 'why' -Explore personal perspective of 'engagement'

	-Compare examples similarities/differences
Looking at the activities for X period, what do you think your options were?	-Explore sense of control over activities -Compare examples -Explore typicality
Were any of these activities things that you had planned to do in advance to meet your learning goals?	-Explore self-regulation (conscious/unconscious goals, planning, self-evaluation, extent self-driven) -Facilitators/inhibitors -Compare with other unplanned activities
Were any of the activities things that you did by yourself?	-Explore differences and similarities between group and solo activities
Looking at the activities yesterday, would you say you had any particular feelings associated with any of them?	-Explore emotions and insight -Explore possible emotional dimension influencing engagement
Considering your day yesterday, could you point to an activity which was interesting? Were any activities not interesting?	-Explore concept of 'interesting' as a way of perceiving patients or activities -Compare examples similarities/differences
Looking at the activities yesterday, would you say any of them you did as part of a routine behaviour or habit?	-Explore nature of routine/habitual behaviours -Compare examples
Were any of the activities listed below particularly affected by the environment or atmosphere on the ward?	-Explore influence of clinical context (circumstances and setting) -Compare examples to identify components
Looking at your questionnaire, I see your time on clinical placement ended at X time, is that typical for you? What factored in to you leaving at that time?	-Explore time as function of engagement -Can you think of a time recently when you stayed later than that? -Can you think of a time recently when you left earlier than that? -Compare similarities/differences

20.5 Learning and growth

Do you think anything has changed over time about what you do on clinical attachments in general?	-Explore location, personnel, nature of work, nature of task - Explore 'why'
What about your time on the ward/clinic/in surgery/GP?	-Compare examples similarities/differences

21. Appendix I: Activities Undertaken by Students

<u>ACTIVITY</u>			<u>Definition (where relevant)</u>
Asking Questions			<i>The act of asking a staff member a question – broad range of options from navigating environments, to clinical enquiries, to asking something to demonstrate knowledge</i>
Assessment related activity	Exam practice or preparation		<i>Engaging in preparation or rehearsal of written or clinical exam</i>
	Logbook		<i>Sign off document for competencies that students must complete</i>
Clinical tasks - discrete	Administration	Death certificate	<i>Legal certificate citing cause of death</i>
		Deprivation of Liberty form	<i>Local form pertaining to restricting patient's freedom</i>
		Discharge letters	<i>Clinical summary of time spent in hospital</i>
		Referral letters	<i>Letter to another specialist or service asking that they review patient</i>
	Investigations and results	'Chasing' result	<i>Seeing if a result is back yet and making enquiries if not</i>
		Ordering investigations	<i>Making requests for a test or scan</i>
		Reviewing results	<i>Looking at results of tests or scans</i>
	'Jobs'		<i>A discrete task that often is listed</i>

			<i>down (colloquial term)</i>
	Phone calls		<i>Any phone-call to a department or relative including making referrals</i>
	Practical procedural skills		<i>Patient-based intervention such as taking blood, observations, insertion of medical devices</i>
	Prescribing or drug management		<i>Administrative tasks around managing the medications for patients</i>
Education centred event	Clinical	Being asked questions	<i>Student is asked a question relating to medicine</i>
		Demonstration or shown what to do	<i>Demonstration of task</i>
		Didactic teaching event	<i>Teaching by direct instruction (often factual)</i>
		Discussing patients with staff	<i>Learning through discursive activity</i>
		Clinical teaching event	<i>Teaching in relation to clinical activity</i>
	Private study		<i>Student doing individual revision or book based learning</i>
	Scheduled formal teaching		<i>Organised teaching event</i>
Family interaction			<i>Engaging with patients' relatives</i>
Making introductions			<i>Introduction processes</i>
Meetings	Board rounds		<i>Discussing a group of patients at a distance</i>
	Handover		<i>Communicating key information about patients to another particularly during transition of care</i>

	MDT		<i>Multi-disciplinary team meeting</i>
	'Huddle'		<i>Short gathering of staff members often in relation to announcements</i>
	Surgical		<i>Meeting relating to planning surgery</i>
Online activity	Checking emails/ social media		<i>Use of internet for personal affairs</i>
	Looking up clinically relevant information		<i>An internet search or enquiry in reference to a clinical event</i>
	Revision or private study		<i>Engaging in private study online</i>
Patient notes	Locating or retrieving		<i>Finding and organising physical patient notes</i>
	Looking at or reviewing		<i>Reading and examining patient notes</i>
	Writing in the notes		<i>Documenting clinical interactions</i>
Seeing patient	Clerking patient		<i>Assessing patient and completing paperwork usually during admission</i>
	Examining patient		<i>Physical assessment of patient</i>
	Handing over patient		<i>Discussing patient with another professional to hand over responsibility</i>
	Reviewing patient		<i>Interim patient assessment</i>
	Social interaction		<i>Engaging with patient on a social basis not directly related to care</i>
	Specialised assessment		<i>Specialist review of patient</i>
	Discussing plan or management		<i>Discussing clinical care strategy</i>
Socialising			<i>Interacting socially</i>

Ward round			<i>Systematic review of a group of patients</i>

Table 19: Definition of activities undertaken by students

22. Appendix J: Extract from account of thematic development and coding refinement

Throughout the analysis process, an account was kept of the decisions made during coding utilising a Microsoft Excel spreadsheet. Figure 45 provides an extract of one of the tables used during generation of the over-arching theme ‘students – qualities, traits and values’. Coding becomes more focused as you progress from right to left. Where codes were deleted, revised, merged or added is represented in the table utilising a colour scheme described in the key.

22.1 Figure 45. 'Excerpt from coding and analysis account

Situation specific associated traits and values. Characteristics of the student which are evident in association with specific situations or contexts. Over-arching node made 23.8.22 when reviewing student features.	Student Features\Fear of failure (linked with 'features of decision making')	Description which gives impression that the student doesn't want to get something wrong or be incorrect.		
	People. Traits and values of medical students evident in relation to their association with people. Overarching node made 23.8.22 when reviewing student features.	Student Features\Not patient centric or de-personalising patient	Exhibited tendency of student not to relate to patient in patient-centric manner or to de-personalise the patient. Revised on 26.8.22 from title 'not patient centred or humanistic' and description 'Student describes something which suggests they are not being patient centred or taking a humanistic approach' when reviewing codes relating to student features.	
		Student Features\Recognising missed opportunity	Tendency of student to be able to reflect on opportunities they have missed in the workplace. Revised on 26.8.22 from title 'recognising other opportunity' and description 'Where a student reflects on other options or opportunities they could have taken up.'	
		Inert	Lacking in action, direction or purpose in relation to workplace activity. New node made 26.8.22 merging 'not knowing what to do' and 'purposeless or lacking purpose.'	

	Workplace activity. Traits and values of medical students evident in relation to their association with workplace activity. Overarching node made 23.8.22 when reviewing student features.	Student Features\Tolerance, degrees of	In-vivo code. Relating to the student character in terms of tolerance level to different situations. Updated on 27.8.22 from description 'Relating to the extent to which students will tolerate a situation'	
			Complaining tendency	Tendency for student to complain or express negative perceptions about workplace activity. Updated on 23.8.22 from 'student features complaints' and description 'Relating to student tendency to complain or being negative'
		Negative work outlook. Where medical student exhibits a trait of holding a negative perspective or outlook in relation to workplace activity. Over-arching node made 26.2.22 when reviewing student features.	Student Features\Can't do attitude	Students' approach to clinical work can be overly negative with an emphasis on what they cannot do rather than what they can do. Code created 21.1.2021 from review of judgements – med students aren't useful or helpful.
		Identity. Traits and values of medical students in relation to their association with workplace activity related to their identity. Over-arching node made 26.8.22 when reviewing student features	Student identity valued	Where in the workplace part of the student character appears to be maintaining or holding firmly to their identity as a student. Updated on 23.8.22 from title 'identity' and description 'Pertaining to a student's sense of identity'
			Student Features\Feeling like doctor	Where student feel they are close to being a doctor and that they should be treated like that

Student Features\Attitude and approach to learning. Reference to student perception of themselves and their attitude towards learning or where this is clearly evident from the description provided. Updated on 4.1.22 from title 'Willingness to learn, attitude towards learning' and description 'Relating to students attitudes to learning, or willingness to learn'				
	Less willing	Reference to a student who is less willing to learn or who otherwise has a relatively more negative attitude to learning. Outnode made 4.1.22 when reviewing students' attitude towards learning		
	Student Features\Keen student	In-vivo code. The perception that students are eager to learn. Node revised on 4.1.22 from 'Where student considers themselves as naturally keen'		
Student Features\Expectations	Deleted 20.12.21 as merged into other nodes including 'beliefs about leaving\ expectations about number of student hours.			

Key

Yellow = coding description revised
Green = coding reviewed
Pink = new code
Orange = coding title revised
Red = deleted
Light blue = other codes merged into it
Medium blue = made from combining codes
Dark blue = over-arching code

23. Appendix K: Supplementary quotes to support thematic development in Chapter 5

The following Table 20 provides additional quotes to support the development of themes and sub-themes in Chapter 5.

Theme	Sub-Theme	Quote (s)
Student - development	<i>Development according to stage of training</i>	<i>Roxy: In third year you have a lot more of a kind of, 'oh, I have to be on the ward 'til this time, because that's what the timetable says' and whatever. I think in fifth year you have to get to a point where you think, 'actually, it's more important that I'm doing something that's useful'</i>
	<i>Ongoing progressive developmental forces</i>	<i>Esme: I would sort of not feel comfortable talking to the patient because I didn't know, you know, what my agenda was.</i> <i>Roxy: So yeah, there's, there's kind of less mental energy directed towards just getting used to being on a ward and stuff in fifth year I think.</i>
Student – beliefs, judgements and opinions	<i>Beliefs – modes of interacting</i>	<i>Jessica: So I left yesterday feeling very motivated because I felt I'd had a productive day.</i> <i>Lee: [I] dictated their letter. Which was good experience,</i>

		<i>because it's not something that I've done before.</i>
	<i>Specific judgements and beliefs in relation to activities</i>	<i>Nick: My motivation for learning to be a doctor, gives me a motivation for admin.</i> <i>Maisie: I ask the doctors, I say, 'if I want to go do a history and exam, who is a good person to actually get a good history off?'... they're like, 'she's, you know, savvy. She knows what she's talking about. He's, he's probably not so good, he's a bit confused today.</i> <i>Carl: An interesting patient would be someone that has interesting signs and symptoms. Or signs that you could elicit. On examination.</i> <i>Esme: But you, but you know in the long term it will benefit you to be there. And be around the clinical setting. Erm. So you can't really do anything but you have to be there. Or you want to be there.</i>
<i>Student – physical states and emotion</i>	<i>Positive emotions and affective states</i>	<i>Roxy: 'We're happy, you're not slowing us down. So don't feel bad about it or anything, it's fine, so.' They were quite reassuring.</i>

		Tony: Even if there doesn't seem to be much happening, but I'm in like, really good sort of enthusiastic mood where I was like, 'yeah, I'll stay around!'.
	Negative emotions and affective states	Jason: I kind of had that, erm, feeling of, 'well nobody wants me here'...So, so then you kind of get, kind of, more and more annoyed as the, as the ward round goes on. You think, you know, like, 'what can I make an excuse? To like, go? Jessica: Today I feel like I've spent most of my time sat around waiting for something to happen? And that's, it's just a bit frustrating... I think that really, like, doesn't help your motivation. Esme: If I'm nervous about something, a skill say, like this was reviewing patients, and I, I had like seen behaviour in myself previously that I was avoiding doing that. Magnus: I guess it was a bit uncomfortable... I suppose as a student you're not essential to the task that's ongoing. Erm, and you don't want to distract them

		<i>Jessica: We've started doing more. And I think that's maybe because I have quite a lot of, erm I get quite stressed.</i>
	<i>Physical states</i>	<i>Roxy: When there's like four or five of us in the little tiny doctors' office, and you just can't [laughs] stand anywhere! So, yeah...feeling uncomfortable sometimes!</i> <i>Jason: I was thinking, all the while whilst being comfortable in bed. Like, right, just, turning off my alarm, going back to bed.</i> <i>Patrick: Doing the same thing too many times in a row can be a bit, [inhales] exhausting.</i>
Student – motivation and assessment	Goals	<i>Esme: This debate about, you know, preparing to be F1 or preparing to pass the exams. And, and the message was always to prepare, you know, for the actual job. Which I appreciate, and I do agree that that's more relevant. However, to reach the job, I have to pass the exams!</i> <i>Tim: [when asked if they had any learning goals] Erm...Not, not any specific ones. Just try and</i>

		<i>get as much as possible erm, because I think, I spent of time last week on the ward. So it's just sort of getting out, seeing more, doing more.</i> <i>Lincoln: I've set in my head I'd like to get through the entirety of medicine. Or like a standard medical textbook before Easter.</i>
	<i>Motivational forces</i>	<i>Nile: I'm so much more confident now. And it's nice, it's nice having the confidence. Because I do feel like er, seeking out things like that and even saying like 'oh, I'll write in the notes' or 'I'll do those bloods if you want'.</i> <i>Tim: I try and personally spend time in surgery...But being in theatre's more of a personal enjoyment, something I like to do.</i>
	<i>Socially derived motivation</i>	<i>Nile: If there's things going on, on the ward that I can help with, I'm happy to stay and do that.</i> <i>Lincoln: I'd quite like to go and see one of those at some point over the next two weeks... so I can be better informed. For myself, but also for patients? So, if they ask me what does this</i>

		<i>involve, I feel like after, if I've been there, then I can better inform them what's actually involved.</i> <i>Lee: So, the patient had complained of 'X and X for two weeks'. Which is a very obscure presentation...it's just one of those things that you sort of enjoy sharing with friends.</i>
	<i>Emotion associated motivation</i>	<i>Esme: I definitely felt that I was really privileged to be in a clinical environment in third year. And that was sort of excitement enough for me. I was really pleased that I was able to be on a ward.</i> <i>Nile: If there was something else that I needed to work for or something else that I could go to the library and do, I probably would have picked that. Just because I don't enjoy being in theatre so much.</i> <i>Jason: If the panic is about the written paper, then I won't be going to the wards at all!</i> <i>Carl: I wanted to study hard. I wanted that stress to push me</i>

		on, and then that final kind of elation when you succeed and you finish.
	<i>External circumstances relating to motivation</i>	Jane: You'd get in trouble if you didn't come in at all. Magnus: I didn't want to be caught not going in!
	<i>Motivation related to experiences and the conceptualisation of these</i>	Maisie: I guess, just, you know, you get a feeling of satisfaction when you get a diagnosis. Lee: It's encouraging when somebody recognises that you know something. Max: I saw him on the ward round, that patient, I thought that's quite interesting, I want to hear more about the history and stuff and surgery.
	<i>Educationally related motivation</i>	Jessica: I get quite stressed out by the MOSLERs? [practical examinations] So I think that's something that I'm quite anxious about.... I'm there being like, 'please can we do a practice one? They make me nervous'. Roxy: There's no point in standing around if you're not getting anything out of it for several hours. When you've got

		a lot of, you know, revision to do for the exams and whatever else. Magnus: It wasn't really from an exam point of view. It was more, from a, just for my own interest, sort of. To see what it was like.
Relational	Features in common to student-staff relationships	Magnus: I was told, I was told that I should probably go to theatre. Harriet: He was like, 'oh well yeah I guess, yeah you can come with me if I want, like I don't mind'. But obviously giving off the impression that he did mind.
	Peer group dynamics, friendships and personal relationships	Harriet: I think I told a couple of my friends...you should really go with this other consultant because he was really great. Esme: Of course it's all like word of mouth and gossip and things!...I went into my, erm like trauma week on my surgical rotation thinking, [sounding despondent-] 'oh, like, this might not be good. Nick: We decided at the beginning that we'd have our own sides of the ward.

		<i>Max: I don't like it when medical students just turn up...I was like, 'This is just so unacceptable can you just please get out?' Like. [pauses] stop it!</i> <i>Roxy: She was like, 'oh, I've just seen...', or they mentioned this patient on my bit of the ward round that had this interesting condition or signs, 'do you want to see them together. We'll just do a quick examination.' It was like, 'oh yeah, OK'. And I ended up learning some things... it does depend on who you're with in terms of what they want to do.</i>
	Student-patient relationships	<i>Max: In first year I went and sat to a patient, spoke to them for half an hour about, you know, what hobbies they have and things like that. I need to, I need to be doing other stuff now.</i> <i>Tony: When it's just the patient who's judging you, they don't know what's going on. They don't know what you're meant to be doing. So, it's less scary?</i> <i>Maisie: You have really chatty patients who they're like, 'oh, this persons' good.' But they're</i>

		actually not, 'cause you can't shut them up! Tony: Not necessarily looking at patients as much as patients and just, you know, what does this thing mean. That means they've got that. Charlotte: It doesn't feel like you're involved in like, what the patients like need and things like that. Maisie: It was quite good in I was following a patient all the way through.
Role, agency, autonomy and independence	<i>Independence and external mediation</i>	Lincoln: I feel like almost have, almost full autonomy. Carl: Ward rounds are going to be our bread and butter. But, I think unless you get a good consultant and junior doctors that are well into, going to involve you and interact with you and allow you to do things. It's, it's literally a, not very useful Roxy: But it's like well, if no one ever teaches us when they're on a ward, then how are we ever going to learn anything?

	Agenda	Magnus: On a medical ward, I would probably decide, like, what was important to me to achieve in that day. And do it. Magnus: I don't know what's, what's important to me, in surgery. I kind of just followed their advice. Nick: I ended up going to the education office being like, 'I know it sounds really silly but like, I don't know what to like do'.
Context, norms and structures including navigation norms	Normative structural arrangements	Tim: I've got a notebook but I also try and document, like I've got a learning diary for each block... when you document things that have happened, you sort of play it through in your head and that builds stronger neural, neural connections. Tony: You have to ask them to request it, or if you think that if you're interested in the medicines, you can't even access eMEDS [electronic prescribing system]. Nick: I remember writing down, like, really, really basic things. But that like really helped me.

		<i>Roxy: When you are just following someone round and they're in such a rush that they don't really have time for you.</i> <i>Maisie: As a medical student and they kind of dismiss you. And I feel like, that blocks a lot of learning opportunities.</i> <i>Tony: Other things is people being there if you need supervising.</i> <i>Jason: The consultant would see the patient with me, and then I'd, I'd scribe and then afterwards she'd just like tell me a bit, a bit more about what, what was going on.</i> <i>Magnus: The consultant or doctor would be, they'd like explain things as they were going along to an extent. So I would probably get more teaching out of that.</i>
	<i>Navigation norms</i>	<i>Carl: We can clerk, clerk patients. Which is really good. In third year you were probably a bit, you'd probably do that as well. But you were probably a bit tentative to do it.</i>

		<i>Magnus: if people have like easy veins, it's not as much as a learning experience as like, someone whos' got like hard veins.</i> <i>Max: [when asked what they found the least engaging] Probably the observations just because it's a bit you know. Like tying your shoe laces.</i> <i>Jessica: I think everyone was like, 'right! Someone has this sign that we always tell you to look for. Go and actually feel it'.</i> <i>Maisie: 'cause they know them, 'cause they've been, you know, seeing them every day on ward round, they're like...He's, he's probably not so good, he's a bit confused today.'</i>
	Context	<i>Roxy: Obviously sometimes people want to leave early, and they're your lift [laughs] so you have to go with them, unless you want to get on a bus for an hour and a half!</i> <i>Harriet: I'm in the army reserves...we have like an evening thing, and I want to be</i>

		<i>there...I'd rather leave [the clinical environment] a bit earlier and to like give myself like more time.</i> <i>Esme: It was my first day of assistantship. Erm, so I came with the intention of purely fitting into the operation of the ward.</i> <i>Jason: I caught them at a busy time at Monday morning. Nobody likes Monday mornings.</i> <i>Jason: I woke up at like 6:15...I was thinking, all the while whilst being comfortable in bed. Like, right, just, turning off my alarm, going back to bed... If it was a two 'til eight [shift] I would have 100% gone in.</i>
Conceptualising experiences	<i>Extracting from experiences</i>	<i>Patrick: It was a positive experience. But there wasn't really anything gained from it.</i> <i>Patrick: You just sort of gotta be patient and wait for them to arise....so there is a bit of standing around involved in being a medical student.</i>
	<i>Positive experiences</i>	<i>Esme: It was an unusually good day. I was like, felt more useful than I have done in, you know,</i>

		months! Erm. And, and everyone was very like, including and welcoming. So that was above average! Nick: I've had the most amazing time. Like, I've learnt so much...It's been great. Really, really good.
Initiation points and decision-making	Planning	Patrick: And when you're, sort of, trying to figure out where to go from then, that's where you'll probably find yourself loitering. Lee: I know the trust does a virtual fracture clinic which I'd not seen before, so I wanted to make it a priority to see that. Tim: I found out who the trauma surgeons were for the week, and tried to follow them on the round, show my interest in what they were doing. Get the round done, so they know me a bit better. And then I tried to go into theatre on those days. Expecting to see them again.... So, it's quite orchestrated.
	Decision-making considerations	Tim: On clinical placements there's quite a variety of things we can choose to do.

		<i>Roxy: What would my options be: go to the library, not turn up, got to a different ward. But like, I'd been assigned to the ward that sounded like it might be quite useful.</i> <i>Jane: I've already done bloods, so, I don't need to do it, I may as well go.</i>
	Choices	<i>Patrick: If I'm told to be in morning and afternoon I'll try and be in morning and afternoon.</i> <i>Lincoln: I could have gone, gone home, gone to the library to study. ...Rather than help out on the jobs</i> <i>Nile: If I speak to the F1s and they say something's happening on a different ward, if they say something interesting's happening here, I'll go and do that</i>
	Initiation points	<i>Patrick: I did a little bit of ward round and then at some point, erm, the consultant said to me, 'oh why don't you see this particular individual?'.</i>

		<i>Harriet: I was like, 'oh, my name is Harriet, like, I'm a final year medical student. Can I come with you on the ward round?'</i>

Table 20: Supplementary quotes to support Chapter 5

25. Appendix L: Focus Group Topic Guide

25.1 Introduction and Consent

- Reminder of main researcher role and name, introduce facilitator where present
- Explain the purpose of the research investigation and the role of the focus group as part of this
- Re-iterate the nature of confidentiality and presence of recording equipment
- Address any final questions/concerns
- Check written consent and confirm verbal consent
- Discuss and agree 'ground rules' for focus group

25.2 Topic Guide

The investigator will use the following topic guide to facilitate discussion. However, the prompts will be used flexibly according to the responses given by the group and adapted where necessary to progress the development of theory.

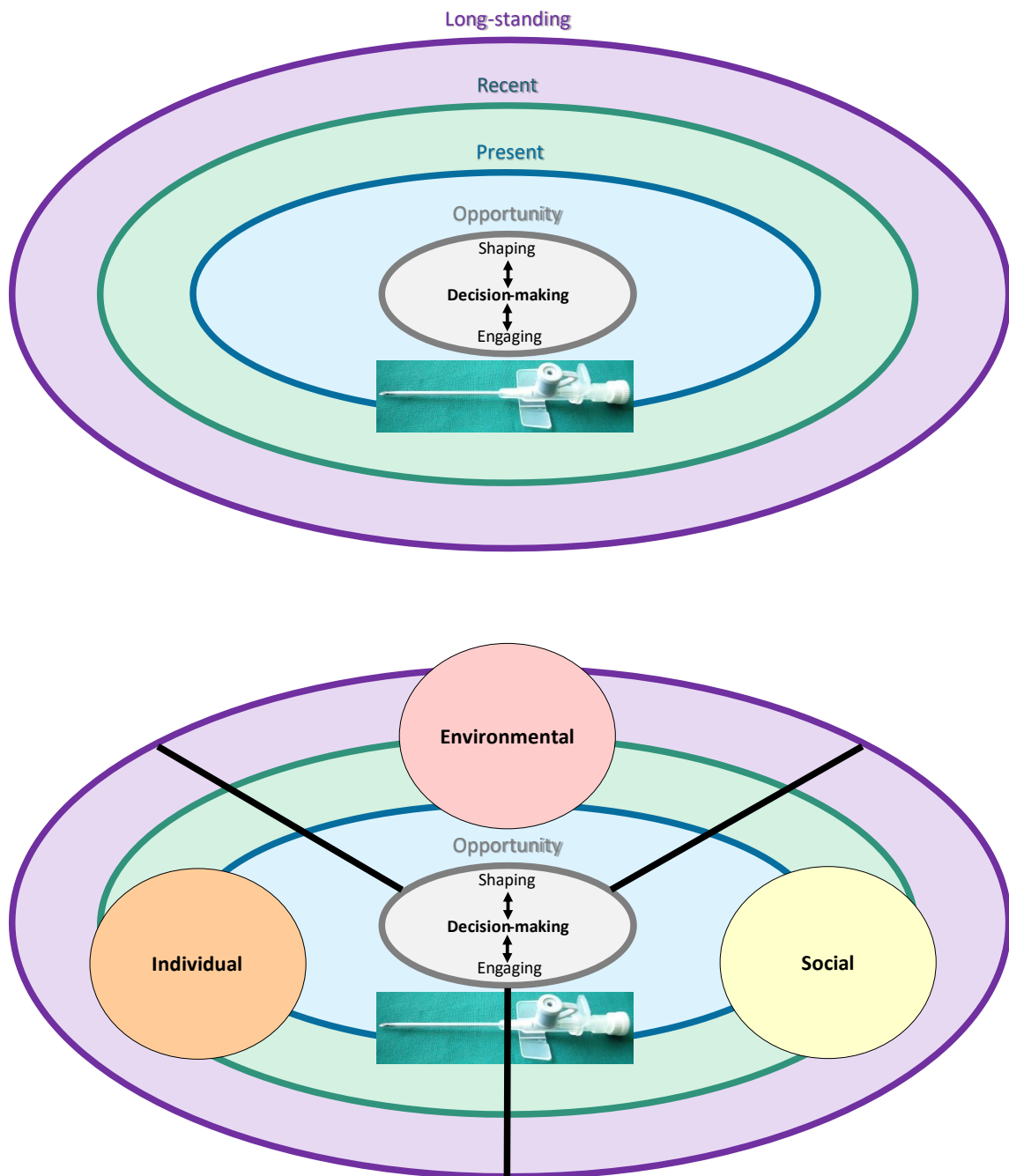
TOPIC AREA	PURPOSE
Introduction	
Using a PowerPoint slide the key objective of the focus groups will be described in lay terms. I.e I would like to understand about your experiences as learners in clinical settings such as wards. I'm particularly interested in your thoughts about how what's going on around you affects your experience and what you do, for example things about the particular environment you are in or maybe the wider circumstances at the time influencing the atmosphere.	Focus the participants on the key research objective being addressed by the focus groups. "To explore medical students' interpretations of what are perceived to be significant contextual dynamics influencing how they approach and experience clinical placements in order to develop an understanding of the relationship between context and student engagement during clinical placements."
Opening	
Ask each member of the focus group to introduce themselves (where relevant) and explain when they were last on a ward.	Face-based question to encourage participation from all. Triggering participants' relevant associated memories.
Transition	

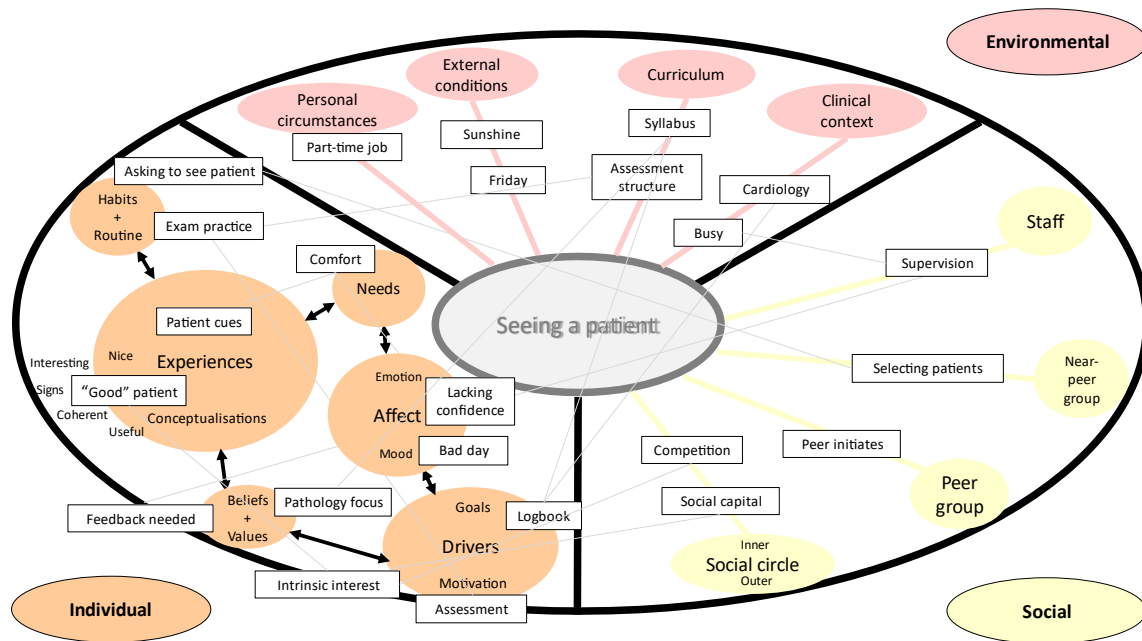
<i>Warm up activity:</i> Participants are asked to reflect on their first impressions entering the ward described above. They should either use three words or draw a picture to represent their impression of the environment. A GIF will be used to introduce the task as an ice-breaker see figure below.	A light-hearted way to encourage participation and spark discussion. First impressions may highlight the dominant or prevailing areas of interest to participants. This may also provide an early opportunity for participants to air strong opinions and provide a way of gauging existing norms and beliefs in the group.
Core Topics	
<i>Expectations:</i> Explore participants' expectations returning to clinical placements at start of term. Compare reality with prior beliefs.	Develop an understanding of participants' beliefs, expectations and intentions entering clinical settings to facilitate understanding of approaches to learning in current circumstances.
<i>Painting a picture:</i> Ask participants to describe their experiences as they access and navigate different environments, visualising each point of interaction. Prompt with key words such as physical (space, layout, equipment, smells, noises), people (staff, patients, student colleagues), atmosphere ('feel' of places, how people talk to you and each-other).	Facilitate participants' accessing relevant memories pertaining to clinical contexts. An opportunity to identify elements of particular significance.
<i>Learning in environments:</i> Encourage participants to compare and contrast their experiences from a perspective of learning. Identify barriers and facilitators.	Explore what are perceived to be significant contextual dynamics relating to learning. Build an understanding of peer-to-peer relations and group learning culture.
Ending	
Summarise and make sure nothing has been overlooked.	Check assumption and understanding of what has been said before. Ensure important aspects/ contributions from quieter individuals are not missed.

25.3 Figure 46. 'Koala' GIF animation for focus group warm up task



26. Appendix M: Diagrams presented during Member-reflective Focus Groups





Summary

- The nature of a learning opportunity is shaped by how a student perceives themselves potentially participating in clinical practice in a given set of circumstances, with engagement characterised by action taken in relation to the perceived opportunity.
- Decision-making is shaped by processes which have developed over different time frames to influence perceptions of reality in the moment.
- The processes underlying students' decisions to engage with learning opportunities can be grouped under the broad categories of individual processes, social processes and environmental processes.
- In relation to similar learning opportunities, patterns of decision-making may arise from a network of stable relationships between the individual, social and environmental processes underlying decision making.

27. Appendix N: Modified Day Reconstruction Method Tool (Pre-Interview)

The following amendments will be applied to the use of the Day Reconstruction Method tool:

- Students will be asked to share what is documented in the diary but will be given advanced warning of this.
- The students will be asked to only include 'episodes' from the start to the end of their period of attending the workplace in order to respect their privacy

Amendments to the text of the tool have also been made to make it suitable for this purpose including respecting the privacy of the student and their colleagues. These are highlighted in yellow.

Questionnaire: Modified Day Reconstruction Method Tool

Yesterday

We would like to learn about your experiences yesterday during your clinical placement. Not all days are the same – some are better, some are worse and others are pretty typical. Here we are only asking you about yesterday.

Because many people find it difficult to remember what exactly they did and experienced, we will do this in three steps:

1. On the next page, we will ask you when **you arrived at the hospital** and when you **left the hospital yesterday**.

2. We'd like you to reconstruct what your day was like, as if you were writing in your diary. Where were you? What did you do and experience? Answering the questions on the next page will help you to reconstruct your day. **Please do not record the names or any identifiable information of other persons including patients, staff members and fellow students.**

3. After you have finished reconstructing your day in your diary, we will ask you specific questions about this time **as part of an interview**. **During the interview, the interviewer will consult your diary page and the notes you made to explore your experiences.**

To begin, please circle the day of the week that YESTERDAY was:

Monday Tuesday Wednesday Thursday Friday Saturday Sunday

Diary Pages

On the next three pages, please describe your day. Think of your day as a continuous series of scenes or episodes in a film. Give each episode a brief name that will help you remember it (for example, **"taking a history from a patient"**, or **"tutorial with B"**, where B is a person or a group of people). Write down the approximate times at which each episode began and ended. The episodes people identify usually last between 15 minutes and **1** hour. Indications of the end of an episode might be going to a different location, ending one activity and starting another, or a change in the people you are interacting with.

There are two pages for each part of the day – Morning (from when you arrived at the hospital up until noon), Afternoon (from noon to 6:00 pm or when you left the hospital) and Evening (from 6:00 pm or until you left the hospital). There is room to list 10 episodes for each part of the day, although you may not need that many, depending on your day. It is not necessary to fill up all of the spaces – use the breakdown of your day that makes the most sense to you and best captures what you did.

Try to remember each episode in detail and write a few words that will remind you of exactly what was going on.

****It may be that there were things you experienced yesterday that have caused you to feel distressed or worried. You may not wish to write about or talk about these experiences. If this is the case, please feel free to omit certain activities from your diary pages. Another option is to mark these activities with a star symbol * to flag these experiences as sensitive to the researcher. If you would like to find out how you can receive support or an opportunity to 'debrief' regarding your experiences during clinical placement, please speak to the researcher who can provide you with more information. ****

Morning

(From entering the hospital until noon)

Activity Name (for example, an activity could be observing/thinking reading/ discussing practising/ doing)	Time it Began	Time it Ended	Notes: 'Paint a picture' of what was happening during the activity
<u>1M</u>			
<u>2M</u>			
<u>3M</u>			
<u>4M</u>			
<u>5M</u>			

<u>6M</u>			
<u>7M</u>			
<u>8M</u>			
<u>9M</u>			
<u>10M</u>			

Afternoon

(From noon until 6pm or leaving hospital)

Activity Name (for example, an activity could be observing/thinking reading/ discussing practising/ doing)	Time it Began	Time it Ended	Notes: 'Paint a picture' of what was happening during the activity
<u>1A</u>			
<u>2A</u>			
<u>3A</u>			
<u>4A</u>			
<u>5A</u>			

<u>6A</u>			
<u>7A</u>			
<u>8A</u>			
<u>9A</u>			
<u>10A</u>			

Evening

(From 6pm until leaving hospital)

Activity Name (for example, an activity could be observing/thinking reading/ discussing practising/ doing)	Time it Began	Time it Ended	Notes: 'Paint a picture' of what was happening during the activity
<u>1E</u>			
<u>2E</u>			
<u>3E</u>			
<u>4E</u>			
<u>5E</u>			

<u>6E</u>			
<u>7E</u>			
<u>8E</u>			
<u>9E</u>			
<u>10E</u>			

Please look over your diary once more. Are there any other episodes that you'd like to revise or add more notes to? Is there an episode that you would want to break up into two parts? If so, please go back and make the necessary adjustments on your diary pages.

28. Appendix O: Exploring student patterns of behaviour during clinical placements and the implications for supporting learning

Abstract of presentation at AMEE (Association of Medical Education Europe) International Conference August 26th - 30th 2023

Background

Clinical attachments are the cornerstone of undergraduate medical programmes. Log-book evaluations and observational studies suggest student behaviour during clinical placements is highly variable. As medical schools invest in longer, more diverse attachments, medical educators should consider how student learning is best supported through understanding behavioural trends.

Summary of work

The study was approached using constructivist grounded theory methodology from an interpretivist perspective to address the following research objective:

- To explore medical students' experiences during clinical placements with a focus on engagement with learning opportunities in order to discern any patterns of behaviour and the implications for learning.

Semi-structured interviews were conducted with a sample of 18 final year medical students. Fourteen interviews were conducted face to face and four remotely due to the advent of the Covid-19 pandemic. A pre-interview questionnaire was used to support exploration of experiences. Data collection was iterative and inductive. Analysis followed the constant-comparison method.

Summary of results

Patterns of behaviour were evident in the general approach to activity, the engagement with specific activities and the management of relationships. Generally, students demonstrated a reticence to become directly involved with activities, characterised by 'hinting and hoping,' 'caution/hesitance' and 'avoidance.' Creative manoeuvring during perceived undesirable circumstances was evident through 'adaptation.' Trends in relation to specific activities included selective attendance and assessment-driven engagement with patients and activities. Strategic behaviours to

manage relationships included deliberately cultivating a positive student impression, tactical questioning of staff and real or fabricated demonstrations of interest in staff members' chosen specialties.

Discussion and Conclusion

Student patterns of behaviour during clinical placement have far-reaching implications for learning. Discriminatory practices governing patient interactions may detract from holistic learning and a patient-centred approach. Students' strategic behaviours toward supervising staff have the potential to exacerbate preferential treatment and perpetuate specialty denigration. Assessment driven patterns of selective behaviour may influence professional development and preparedness for practice.

Take Home Messages

Medical students engage in a diverse range of behavioural patterns during their clinical placements which may have wide-ranging and significant implications for their learning. Understanding the nature and origin of these behaviours could help inform placement design and strategies to support student learning whilst in clinical environments.

29. Appendix P: How do medical students navigate learning opportunities during clinical placements? Exploring the inter-related processes underlying student engagement

Abstract of presentation at AMEE (Association of Medical Education Europe) International Conference August 24th – 28th 2024

Background

Workplace learning theories such as 'Experience-Based Learning' have elaborated the complex interacting influences on student learning on clinical placement. However, the literature reveals a gap in relating these determinants to the pervasive problem of variable student engagement on placement. Examining student involvement with activity ('engagement') and their agency in the process ('navigation'), requires exploration of the moment-by-moment factors underpinning student participation, recognising these may be reactive and unconscious.

Summary of work

The study followed constructivist grounded theory methodology from an interpretivist perspective. The aim was to develop a conceptual model of the inter-related processes underlying UK medical students' decisions to engage with learning opportunities during clinical placements. Semi-structured interviews were conducted with a sample of 18 final year medical students, utilising a pre-interview questionnaire. Four focus groups examined contextual influences. Two member-reflexive focus groups developed the emerging conceptual model. Data was collected from 46 participants. Analysis followed a constant comparative method.

Results

Student engagement with clinical activity is underpinned by a complex interaction of individual, social and environmental influences. Students' prior traits and beliefs influenced decision-making in conjunction with motivational drivers such as assessment and career goals. Complex relational dynamics both supported and inhibited learning, especially given students' reliance on external mediation and susceptibility to the value judgements of others. Pertinent environmental influences

included the physical space, clinical activity dynamics and students' personal lives. These interacting factors translated to behavioural norms, evident in students' highly selective and strategic interactions with patients, staff members and clinical tasks.

Discussion and Conclusion

Where the existing literature over-emphasises formal learning processes, this study suggests student engagement with workplace learning opportunities is determined by a complex interaction of explicit and implicit factors which are dynamic, reactive and contextually dependent. Educators' aspirations for student behaviour on placement contrasts with the reality of variable engagement patterns. Suggested interventions include challenging staff-student behavioural norms such as staff directing students to a circumspect group of patients and asking students to leave placement early.

Take home message

Uncovering the interacting network of influences underpinning medical student activity during clinical placement yields valuable insight into modifiable factors which may support student engagement including revising assessment strategies and investing in staff-student relationships.

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