THE UNIVERSITY of EDINBURGH

Exploring the enablers and inhibitors of feedback-seeking in learners

Dr Harpreet Michelle Arora

Doctor of Medicine (MD) 2019

The University of Edinburgh

Lay Summary

Background

With the increasing pressures on the NHS and an increase in medical school places, clinicians find it challenging juggling teaching with patient care. We therefore need to consider how to maximise learning within existing resources. Feedback is one of the most important influences in learning, yet students feel they receive insufficient feedback. However, students who seek feedback are more likely to recognise that feedback, be more receptive to it and find it more valuable, hence overcoming some challenges of receiving feedback. Students seek more feedback as they become more senior, so we need to consider how to develop these skills earlier to maximise learning. This thesis aims to explore the enablers and inhibitors of feedback-seeking and the impact of a formative feedback tool on these inhibitors.

Methodology and Methods

This is a qualitative research study, using data collected from interviews and questions from students and doctors, which were analysed to develop a framework of knowledge. In addition, I designed a feedback tool for students which was implemented across 6 NHS trusts in Scotland and was used by 750 students and over a thousand clinicians. The impact of this tool on promoting feedback-seeking was also explored.

Results

Intrinsic, extrinsic and feedback factors influenced students' feedback-seeking. They were less likely to seek feedback if they feared the clinical environment, feared approaching clinicians or had had unhelpful experiences in the past. Other barriers included feeling doctors were too busy or unapproachable to ask. They were more likely to seek feedback if they felt part of the team and had confidence to overcome their fears of seeking feedback. Senior students were more likely to seek feedback because they became more confident, appreciated its value and developed successful strategies to overcome failed attempts.

A feedback tool empowered some students to approach doctors and enabled doctors to recognise they wanted feedback. However, other students disliked feeling forced to perform a task which may

not be beneficial, especially as some feedback continued to be unhelpful. These students had already developed successful strategies to seek feedback.

Discussion and conclusion

Medical schools can encourage earlier development of feedback-seeking behaviour by supporting students to develop the skills to overcome barriers. They can also help reduce barriers through reassuring this is expected behaviour and staff development interventions. However, a feedback tool may not overcome barriers for all students and may even have some negative effect.

Scientific summary

Background

Feedback is one of the most effective influences in learning, but students often feel they receive insufficient useful feedback. However, most research into feedback considers learners to be passive recipients, when in reality students may proactively seek feedback. Feedback-seeking can overcome some challenges with feedback, improving its perceived value and increasing feedback-receptivity. As feedback-seeking behaviour develops as learners become more experienced, we need to consider how to promote its earlier development to maximise learning.

The aim of this research was to explore the promotors and inhibiters of feedback-seeking behaviour in learners, and the effect of a formative workplace-based assessment tool on these feedback-seeking barriers.

Methodology and methods

This is a qualitative study using constructive grounded theory. Data were collected from single and group interviews with thirteen students and eleven clinicians, and free text responses to questionnaires. Interview data were transcribed and analysed using a constant comparative analysis approach to develop key themes, which reached data saturation. A formative workplace-based assessment tool was developed and the pilot cycles evaluated, on 750 students and over a thousand clinicians in 6 NHS trusts across Scotland.

Results

Analysis identified intrinsic, extrinsic and feedback factors influencing feedback-seeking. Intrinsic inhibitors included fear of patients, the clinical environment, lack of confidence and unhelpful previous experiences of seeking feedback. The predicted feedback sign influenced the decision to feedback-seek, depending on whether the student sought feedback to improve performance or for reassurance. Extrinsic inhibitors included perceived lack of approachability or availability of staff, high clinical workload and hostile reactions of staff when approached. As students became more senior, they were more likely to seek feedback because they developed confidence and strategies to approach staff, which overcame fear.

A formative workplace-based assessment tool enabled feedback-seeking in junior students, who lacked confidence to overcome barriers, by empowering them to approach clinicians and helped recognise feedback-seeking attempts. However, other students felt it reduced autonomy, viewing it as a task they were forced to do with little benefit. These students had already developed successful strategies to seek feedback, or found approaching staff extremely stressful and anxiety-provoking.

Discussion and conclusion

Understanding what inhibits feedback-seeking helps educational organisations support students to develop the skills and motivation to feedback-seek earlier. We can also help break down barriers ourselves, for example we can describe how to approach clinicians, and reassure them that this is an expected behaviour. Increasing staff receptivity to students' feedback-seeking, through training to improve confidence and recognition of feedback-seeking, will increase success.

Declaration

I am aware of and understand the university's policy on plagiarism and I declare that this thesis has been composed solely by myself and that it has not been submitted, in whole or in part, in any previous application for a degree. Except where states otherwise by reference or acknowledgment, the work presented is entirely my own.

I confirm that this thesis presented for the degree of Doctor of Medicine (MD) has been composed entirely by myself, been solely the result of my own work (except where explicitly stated otherwise in the text) and not been submitted for any other degree or professional qualification.

Signature:

Date:

Dedication

This thesis is dedicated to my family, for putting up with my unsociable behaviour while studying for this degree, and my Educational Supervisor during my training, Dr Julie-Clare Becher, for her phenomenal support, encouragement and motivation.

Acknowledgements

I am indebted to my supervisors, Professor Helen Cameron and Dr Dave Hope, who have provided advice at every stage of this thesis. I would also like to thank Dr Derek Jones for his guidance in helping me structure this thesis, Dr Velda McCune for acting as my internal reviewer during my annual reviews and Dr Mark Lillicrap and Professor Clare Morris for reading through the final draft to check it makes sense!

I would also like to thank my MD examiners for taking the time to read my thesis and conduct my viva and the University for Edinburgh Principal's Teaching Award Scheme for their grant.

However, most importantly, I would like to thank the students and clinicians who kindly volunteered to participate in this research.

Ethics

Ethical approval for elements of this research involving students was obtained by the College of Medicine and Veterinary Medicine Ethics Committee. Ethical approval for the components involving clinicians was waived by the NHS Lothian Research Ethics Committee.

I obtained written consent for publication and presentation of anonymised results of all interview and questionnaire data collected.

Word count: 59 400

Contents

Section 1

Introduction

1. Introduction

1.1.   The challenges of modern medicine: we need to train smarter

The tensions between delivering effective education and patient care have been well described and are set to become even more challenging in the near future. There are increasing pressures on practising modern medicine in the NHS (Department of Health 2015) due to increasing workload, from a growing elderly population with increased frailty and co-morbidities (Office for National Statistics 2013, Department of Health 2010), increased patient expectation and a wider choice of management options based on increased research and guidelines. However, the NHS is experiencing a comparative reduction in resources, such as a relative reduction in hospital beds (RCEM 2016) and many specialties are experiencing strains from an insufficient workforce and rota gaps. Clinicians report experiencing higher levels of stress, depression, anxiety and burnout than before, with many junior doctors wanting to take a career break after completing foundation training (General Medical Council, 2018).

UK medical students already feel unprepared for practice in certain aspects of life as a newly graduated doctor, such as time management, dealing with a heavy workload and staffing problems (Mattick *et al*., 2014).

With patient care often taking precedence over education, it is understandable that many clinicians feel they have insufficient time to deliver education as well. In a recent survey conducted by the GMC, responders felt they had insufficient time dedicated to delivering education and 36% reported being unable to use the time they had allocated for teaching and training (General Medical Council, 2016).

With UK medical student places increasing and the development of new medical schools sharing existing hospitals and General Practices, it is essential to consider how we can maintain standards of training and optimise resources already available without compromising patient care, ensuring each student has adequate patient contact. We want to train our students to become safe, competent junior doctors who are able to assimilate vast amounts of information, communicate effectively, act professionally, recognise their limitations and proactively seek learning opportunities. The answer cannot simply be more training. We need to consider smarter training within the limited resources available.

One way of delivering better training is to improve feedback delivered to learners. Feedback is one of the top 5 most important positive influences in teaching and learning (Hattie and Timperley, 2007) and effective feedback improves performance, learning and motivation. However, students at

Edinburgh Medical School (EMS) described significant dissatisfaction with feedback in the National Student Survey. I will now discuss this in more detail

1.2.   What is feedback and why is it so important?

1.2.1. What is feedback

Medical education literature uses a range of definitions of feedback. Due to such variation, Van de Ridder (2008) conducted a literature search of definitions in dictionaries, social sciences literature and medical literature, devising a definition from 133 articles:

> " *specific information about the comparison between a trainee's observed performance and a standard, given with the intent to improve the trainee's performance" (Van De Ridder et al., 2008).*

I have therefore used this definition of feedback on performance in the clinical environment throughout this thesis because it is synthesised from a large number of papers and is the most widely accepted definition for feedback in the clinical workplace.

Feedback may occur when a learner is offered insight into what he or she actually did and the consequences of his or her actions (Ende, 1983). For example, in medical education, feedback can be given following an observable activity such as history taking, clinical examination, clinical reasoning, handover or working with colleagues in a team (Van De Ridder *et al*., 2008).

1.2.2. Why is feedback important?

Feedback is one of the top 5 most important positive influences on learning and performance (Hattie and Timperley, 2007). Other important influences include direct instruction, reciprocal teaching and students' cognitive ability, according to Hattie *et al*, who conducted a detailed literature review of 500 meta-analyses, incorporating 180 000 studies exploring feedback. Another review of 41 studies (Veloski *et al*., 2006) concluded that feedback had a positive impact on learners' performance in almost three quarters of studies when provided by a credible source over a sufficient period of time.

Feedback can improve learning and performance by helping the learner identify how well they are performing against a certain standard (Ashford, 1986a; Ashford *et al*., 2003), reducing uncertainty and helping identify the gap between current and expected standard of performance (Locke and Latham, 1990; Song and Keller, 2001). Supportive, effective feedback can also reduce the cognitive load of a learner, especially a struggling learner (Moreno, 2004; Paas *et al*., 2003; Sweller *et al*., 1998), reducing feelings of being overwhelmed during learning. Furthermore, feedback can help correct errors in

understanding, strategies for approaching tasks and performing procedures (Baron, 1988; Van De Ridder *et al.*, 2008)

Unfortunately, feedback may have a negative effect if not delivered effectively or appropriately, which is one of its biggest challenges. Kluger and DeNisi (1996) performed a meta-analysis on 131 studies with a total of 12652 participants, comparing the effect of feedback with no feedback on performance. In over a third of studies, feedback reduced or was perceived to reduce performance. Factors which specifically reduced performance included if the focus of the feedback was about the learner rather than the task, for example if feedback is delivered in public

Despite feedback being so important, students in EMS felt they received insufficient useful feedback. I will now discuss the structure of EMS and its feedback strategies in more detail, as this was the environment in which that my research took place.

1.3.   Context of this research

1.3.1. Introduction

This research was conducted from February 2014 to February 2016.

This section provides an overview of the environment and situation in which this research was conducted, key issues driving this research and the changes we made and the structure of the university. Considering the context my research took place is relevant to my research paradigm (section 3), so that the transferability of my findings can be considered (Morrow, 2005a; Suzuki *et al.*, 1999).

1.3.2. University of Edinburgh: an overview

Provision of feedback is one of the University of Edinburgh's priorities and the university has allocated resources to improving feedback and formative assessment. The University's Institute of Academic Development has conducted several projects exploring how to improve feedback, and has made a number of teaching resources to develop the feedback skills of the University's teaching faculty.

The University describes two principles underpinning their strategy to promote effective feedback:

> "**First principle:** *that the effective provision of feedback is highly contingent, varying from task to task, from subject to subject and from one course setting to another. No single measure or strategy is therefore likely to be optimal across the institution.*

> **Second principle:** *that enhancement initiatives should be evidence-based, drawing on relevant research and scholarship and on documented efforts to improve feedback." (Enhancing feedback, The University of Edinburgh 2015)*

Based on these are the Twelve Principles of Formative Assessment, outlining how teachers can provide effective feedback.

1.3.3. Edinburgh Medical School: an overview

The Programme

EMS is one of five Scottish medical schools and is the oldest in the UK, having been established in 1726. At the time of commencing this research study, EMS was a 5-year undergraduate MBChB modular programme, with each module based on body systems and clinical specialties. Twelve Programme Theme Outcomes run throughout the programme, which map to General Medical Council (GMC) outcomes (General Medical Council, 2009). EMS has an integrated teaching programme, which means clinical and basic sciences are taught and learned together to combine scientific knowledge with clinical experience (General Medical Council, 2009).

Table 1: Summary of the Edinburgh Medical School Programme

Year	Summary ("Edinburgh Medical School | The University of Edinburgh,")
1	Principles of Practice: anatomy, physiology, microbiology, pathology, social and ethics.
2	Taught through lectures, tutorials and problem-based learning Early patient exposure through General Practice
Optional intercalation	Study for BSc or MSc
3 4	Process of Care: revisit clinical systems in a hospital and General Practice attachments.
5	Preparation for Practice: consolidation of learning in hospital attachments. Student Assistantship: hospital-based apprenticeship Elective: opportunity to experience healthcare in another country

Geographical distribution of student placements

Students may rotate through the 6 NHS hospitals in Edinburgh or be placed elsewhere in Scotland, such as the Scottish Borders, Dumfries, Kilmarnock, Fife or as far north as Stornoway (figure 1). They do not rotate through private hospitals.

Figure 1: Geographical locations of students' attachments
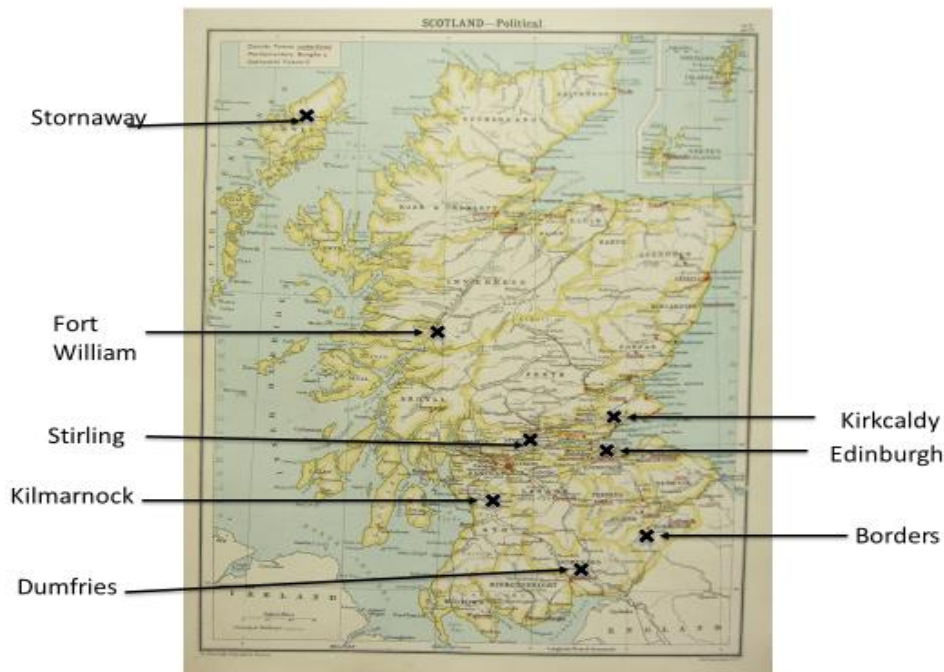
Demographics

Approximately a quarter of students are Scottish, so some enter EMS at 17 years old. Other UK and international students enter the programme at 18 years old. There are between 6 – 10 postgraduate entry students per year.

The medical school accepts students from the UK, the EU and other overseas countries for entry at year 1. Many students join in year 3 and a large proportion of these are from Malaysia and Singapore. Table 2 below shows the total number of students per year at the start of this project, along with the breakdown of EU and overseas students. The table also shows how many of these overseas students joined the programme at the start of year 3.

Table 2: Demographics at the time of this study

	Year 3 (% female)	Year 4 (% female)	Year 5 (%female)
UK	167 (56%)	202 (55%)	219 (54%)
Rest of the EU	14 (63%)	9 (78%)	6 (50%)

Overseas – not EU	40 (55%)	52 (54%)	46 (54%)
Of which direct entry at Y3 from Malaysia/ Singapore	*12*	*13*	*12*
Total	221 (55%)	263 (55%)	271 (54%)

Governance Structure

Unlike most other higher education courses, MBChB teaching staff are primarily practising NHS doctors. In addition to delivering patient care, undergraduate teaching competes with postgraduate teaching, research and management.

Students are allocated a tutor during their attachment, who is a consultant or GP. They are also taught by junior doctors, nurses and other health professionals. Tutors are responsible to a site module lead (SML). Each hospital site has its own SML, who is accountable to a module organiser (MO). There is one MO per module. MOs report to the head of each year, the Year Director.

Module meetings are held annually to disseminate changes to the course or assessment processes. All other communication is usually via email. SMLs meet with clinicians on their hospital site to communicate these changes.

The Assessment Structure

At the start of this project, assessment of each module comprised a final grade based on performance in the clinical attachment, in-course assessments, a portfolio case report, an Objective Structured Clinical Examination (OSCE) and a written single-best-answer (SBA) paper at the end of each module. These marks contributed to students passing the year. During finals at the end of year 5, students needed to pass a written SBA paper, an OSCE, a Portfolio Viva and in-course assessments during the year.

In-course assessments during clinical attachments were mostly summative and varied in type and how they were used between modules and year groups. Some modules used logbooks, others used professionalism forms or summative workplace-based assessment forms. This created confusion among students, who felt they had too many different types of forms to complete, which they found confusing and distracted them from learning.

1.3.4. Postgraduate Life

After year 5, graduates enter a 2-year Foundation Programme (FP) followed by specialty training. During FP and specialty training they need to complete a minimum number WPBAs per year in order

to progress, which used to be summative MiniCEXs, Case Based Discussions and Direct Observation of Procedural Skills. In postgraduate education, as with undergraduate education, there has been dissatisfaction with previous WPBA tools used due to concerns about quality and quantity of useful feedback. Trainees felt WPBAs were not used for maximal educational impact Bindal *et al*., 2011; Pelgrim *et al*., 2012) and their summative nature inhibited trainees from seeking feedback. Completing WPBAs and caused stress and anxiety and were generally felt to be a "*tick box exercise*" rather than an educational tool to improve feedback. (Bindal *et al*., 2011a; Driessen and Scheele, 2013; Pelgrim *et al*., 2012).

As with many Assessment Strategies in the UK, postgraduate Royal Colleges moved from summative to formative workplace based assessment tools, removing grades but providing narrative feedback.

1.3.5 National Student Survey (NSS)

Students in all UK Universities in all courses are asked to complete a National Student Survey (NSS) in their final year. The NSS collects data reported by students on different categories in education, including Assessment and Feedback.

In 2014, 79% of students at EMS completed the NSS. While 80% of students rated themselves as satisfied overall with the course (compared to 82% averaged across the university), only 30% were satisfied with quality and usefulness of feedback (figure 2). This was a decrease from 37% the previous year and a steady decline from just over 50% in 2010, demonstrating a clear trend. The university average rating for Assessment and Feedback was 55%, ranking the College of Medicine and Veterinary Medicine at the bottom. Nationally, this ranked 28th out of the then 29 UK medical schools.

Figure 2: National Student Survey results for Edinburgh Medical School

Edinburgh Medical School NSS scores

Legend:
- Response %
- Teaching
- Assessment and feedback
- Academic support
- Organisation/management
- Learning resources
- Overall Satisfaction
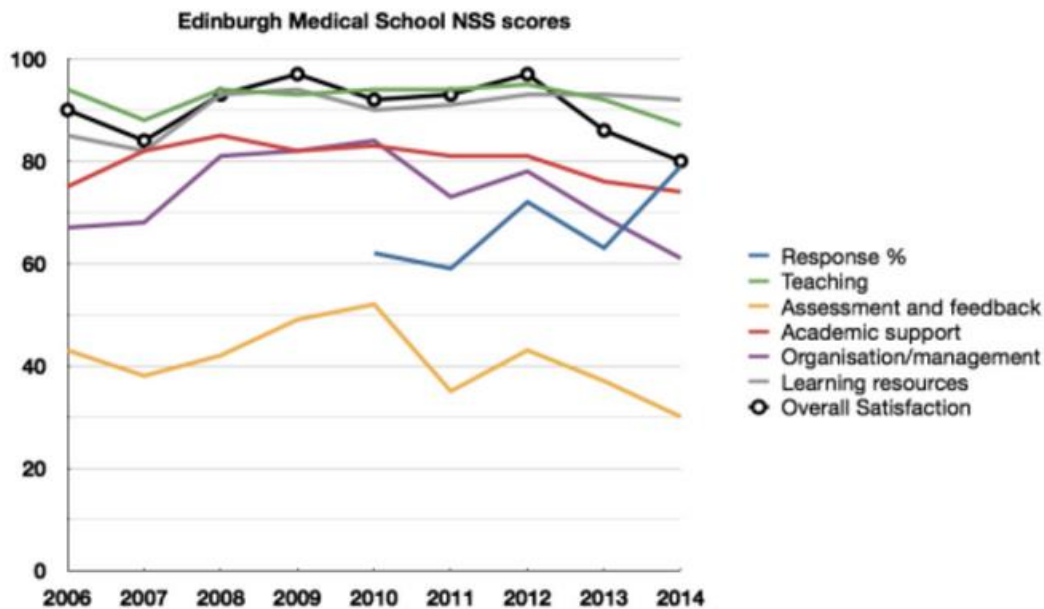
Review of students' detailed written comments and further internal work by UoE and EMS (conducted by HSC and DH prior to this project) about students' experiences of feedback referred to students passively receiving feedback, but not proactively seeking feedback, dissatisfaction with lack of useful feedback, especially in the workplace, lack of clarity and timeliness and feedback being given by clinicians who did not know them well. They disliked the WPBA tools in use, perceiving them to be an administrative exercise with little learning benefit, which added to their stress. Our concern was that removing all summative WPBAs from the programme would result in even less feedback during attachments, so this needed to be replaced with an alternative. We therefore proposed moving from summative to formative WPBA tools with the aim to increase feedback delivered on clinical attachments.

So far, I have highlighted the importance of feedback in teaching and learning and discussed the dissatisfaction EMS students had with feedback received. However, the perception of receiving insufficient useful feedback is not unique to EMS and is a source of discontent for many learners in other educational organisations. This is discussed further in the next section.

1.4 Challenges with feedback

1.4.1 What are the challenges with giving effective feedback?

Despite feedback being so important, tutors can find it challenging to deliver useful feedback. They may experience a difficult balance between providing constructive feedback, which some studies suggest can improve performance without improving student satisfaction (Boehler *et al*., 2006) and may impact on self-esteem, and delivering positive feedback, which improves student satisfaction, self-esteem and motivation to learn (Ilies *et al*., 2007) but may not improve learning and performance.

Lack of confidence and insufficient training also inhibit the feedback-giver to provide feedback. Kogan *et al* explored clinicians' perceived challenges with providing feedback, which included lacking confidence in the skills they were assessing, or delivering feedback on non-cognitive competencies such as empathy and communication (Kogan *et al*., 2012).

Furthermore, if tutors do not consider teaching to be part of their role, they are less likely to provide frequent, better quality feedback because they do not feel it is their responsibility to observe and deliver feedback (Pelgrim *et al*., 2014).

1.4.2 The challenges with receiving effective feedback

Even if tutors try to provide useful feedback, learners may not find it useful and may have different perceptions of what constitutes feedback (Gil *et al*., 1984).

Firstly, learners may perceive they have not actually received feedback (Al-Mously *et al*., 2014a; Daelmans *et al*., 2004). They may have difficulty recognising or remembering if feedback has taken place (Boehler *et al*., 2006; Hattie and Timperley, 2007). In two studies exploring perceptions of giving and receiving feedback in medical education (Gil *et al*., 1984; Sender Liberman *et al*., 2005a), tutors felt they gave sufficient feedback but learners disagreed. Liberman found that approximately 86% of tutors perceived that they often gave feedback immediately after the event, while only 12.5% of their trainees agreed. Recognition improves if feedback is expected to take place, the feedback-giver is felt to be credible or if is given in writing rather than verbally (Bowen *et al*., 2017a).

Other factors influencing students' receptiveness to feedback and perceived value include self-esteem and the emotional impact of the feedback experience and if feedback is based on first-hand observations (Eva *et al*., 2012a; Watling *et al*., 2012; Young, 2000). Shute (2008) conducted a literature review of other factors affecting learners' feedback receptivity and concluded that specific, task related feedback was felt to be more useful than general advice. If feedback is too lengthy or contains too many messages, it is difficult to retain, identify and utilize the key points (Kulhavy *et al*., 1985).

There have been a number of guidelines published, detailing how to provide useful feedback and models to help provide useful feedback (Ramani and Krackov, 2012), based on the vast amount of

literature on studies of feedback interventions. However, despite so much literature, guidance and other resources on feedback, and so many studies on how to improve feedback, we have still not overcome these difficulties. Learners continue to experience dissatisfaction with feedback and tutors continue to experience challenges with giving feedback, as experienced in EMS.

1.4.3 Moving from a teacher-centred to student-centred approach

Interestingly, the majority of literature and guidance on feedback has a teacher-centred approach, considering the teacher as providing feedback and the learner as a passive recipient of feedback. However, in reality, feedback isn't always so simple. This ignores the fact that it can be a two-way process, with students being agents of their own learning (Ashford *et al*., 2003; Ashford and Cummings, 1983a). Hence, more recently, educationalists are moving towards a more student-centred approach to feedback, appreciating that learners may proactively decide when, where, from whom and on what they choose to seek feedback (Bing-You and Trowbridge, 2009; Boud and Molloy, 2013; Delva *et al*., 2013).

1.5 Summary

Feedback is one of the top 5 most effective influences in improving learning and performance, but only if delivered effectively. Unfortunately, many learners are dissatisfied with how much useful feedback they receive, including students at EMS. Despite the significant amount of research on how to improve feedback, we have not yet overcome the challenges with delivering and receiving useful feedback, including recognising and remembering feedback.

Much of the existing literature is teacher-centred, focusing on how teachers can deliver better feedback and does not appreciate the two-way nature of feedback, with students sometimes actively seeking it.

Figure 3: Factors contributing to learners' dissatisfaction with feedback

2 The Importance of Feedback-Seeking

2.1. Introduction

Feedback improves learning and performance

⬇

Learners (including students at EMS) feel they do not get enough feedback

⬇

There are a number of challenges with receiving and giving effective feedback

⬇

This section: Can a student-driven approach to feedback help?
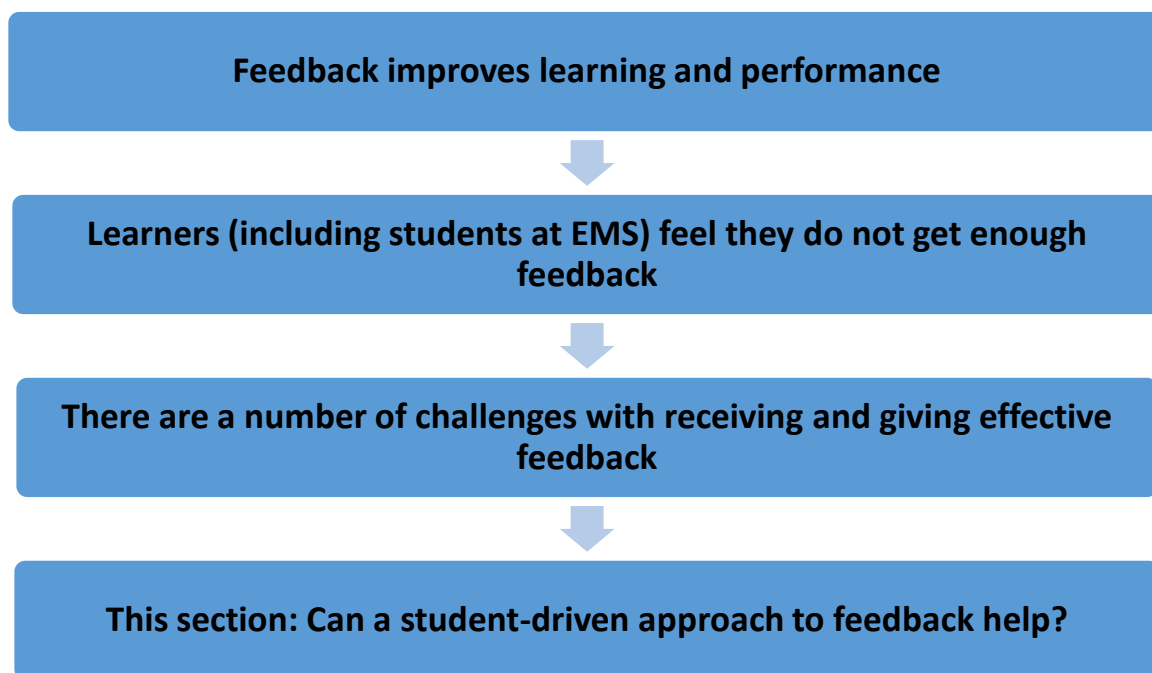
This chapter considers feedback from a student-driven perspective. I will define feedback-seeking and outline its importance, then discuss feedback-seeking in EMS.

2.2. How I performed this narrative review
2.2.1. A note about the timing of this literature review

Feedback-seeking is a relatively new subject in medical education and a considerable amount of literature has emerged since I performed this literature search and stopped data collection and analysis. I therefore re-searched these databases in summer 2017 to include these studies in this chapter and continued to update my search until submission.

While literature published before or during my research has influenced the direction of my study, a significant number of publications post-date my project design and data collection. Hence, I repeated this literature search at the time of writing my discussion and revisited the literature on an ongoing basis to ensure I continue to remain informed by high quality scholarship. Many of the papers found through my subsequent literature review offered an insightful perspective to my findings, enabling better understanding and support of my conclusion. No studies contradicted my methods or findings. I have only included relevant, average or good quality papers in this literature review.

2.2.2. Search Strategy

For the purpose of producing a narrative literature review, I searched Medline, Scopus and Pubmed databases between 2014 and 2015.

This was a limited systematic search of the literature, which did not include all available databases. I restricted literature to studies available online which were either free or access was available through my institution. I used Medline, Scopus and Pubmed as these databases contain large vast numbers of references. I chose to use three databases as not all databases indexed all journals and they index articles differently.

Each database has its own advantages. For example, Medline contains large numbers of free articles from 1946 onwards, which are well indexed and updated annually. Scopus contains articles from 1966 onwards but it also allows a citation analysis, so I could screen citations for relevance to my search. Scopus also contains twice the number of journals that Pubmed contains. Unlike other databases, Pubmed contains online literature which is available before publication, which is essential in such a current topic. However, it does not allow a citation analysis.

I chose not to use other databases such as Embase and Google Scholar. While Embase contains several thousand journals which are not available elsewhere, these journals are more useful for literature searches about medical treatments and contains less literature on educational psychology or medical education. Google Scholar uses algorithms to rank articles on the page according to the most users or visits and articles are indexed automatically, resulting in retrieving large numbers of articles of low relevance.

Medline search

- MeSH headings of "feedback" and "seeking"
- Retrieved 726 search results (latest search performed May 2017)
- Majority of these articles related to literature on drug misuse and addiction, depression or endocrinology. Articles were excluded by title, if they were clearly unrelated to education, then by abstract.
- Left 46 relevant articles. Many of these articles used "feedback" as a MeSH heading but did not use feedback-seeking. About half of these articles used "education" as a MeSH heading.
- Key papers from this selection were reviewed for similar articles using this function in Medline.
- References in these key papers were also reviewed for other potentially relevant articles.

- This search was repeated again in Spring 2019 to include any new recently published literature

Scopus search

- Using the terms "feedback" and "seeking" and "education". Last performed June 2017.
- 759 articles retrieved.
- Excluded on the basis of title (if obviously not relevant) and then by abstract.
- Resulting in 31 articles
- Majority of the others were again related to psychiatry, patient care or other aspects of education not relevant.
- Repeated Spring 2019 to include newly published literature

Pubmed search

- Searched for feedback AND seeking AND education in abstract and/or title
- 215 articles in total (when re-searched in May 2017)
- Selected on title and then abstract, leaving 30 articles of relevance

As it is not possible to completely rely on electronic databases to retrieve articles that met my criteria (Hammick *et al*., 2010), I also searched references and citations of articles retrieved. I used Google scholar to locate relevant articles. I was able to locate all articles online except one (see appendix). I did not include unpublished articles or papers which were not available in the English language (only one paper in Dutch), which lends bias to my search strategy.

Articles were screened on the basis of title and abstract. If potentially relevant, the full text was retrieved and read for consideration of inclusion in this review.

There are a number of other concepts discussed in this thesis as they are relevant to this research. I have not performed a thorough systematic review of these concepts but I have summarised key concepts from high impact literature. These papers have mostly been located during my general reading on medical education over the last 6 years of my development as an educator and scholar, papers flagged by authors on my Twitter newsfeed or when attending conferences, when reviewing references of key papers on feedback seeking and using the search engine Google Scholar.

All papers in this literature review refer to feedback-seeking in the workplace and not learners seeking feedback on performance in examinations or written work.

2.2.3. Challenges with performing this literature review

There were a number of challenges with conducting this literature review as follow:

Retrieval: The word "feedback" retrieved a significant number of articles relating to biomedical subjects, such as endocrinology and neuroscience. Like other educationalists who have performed similar literature reviews (Anseel *et al*., 2015; Hofmann *et al*., 2009; Nadler *et al*., 2003), I also inadvertently retrieved articles on advice-seeking and help-seeking not related to education, which I removed by hand. There is much research on feedback in medical education and my searches retrieved many of these articles. I excluded them if they focussed on receiving feedback, rather than learners actively FBS.

Context: Feedback-seeking is a relatively new but rapidly expanding topic in medical education. Many older articles draw on studies in organisational psychology, school or higher education unrelated to medicine. While it is critical to take these studies into account, these findings are not necessarily transferable. Medicine is a vocational subject, with students entering the course with the intention of becoming doctors, unlike many other higher education subjects. In addition, many medicine courses are required to contain summative assessment in addition to feedback, due to concerns about patient safety and the need to satisfy the general public and regulatory authorities. Staff teaching in medicine are also practising doctors, nurses or other health professionals, and delivery of patient care is usually prioritised over education. Students learn in an environment where patient care is the main priority of the organisation, not education. Furthermore, findings may conflict. For example, in organisations, FBS reduces in frequency as participants integrate into the organisation (Anseel *et al*., 2015). However, a recent study in medical education found FBSB develops as students mature (Murdoch-Eaton and Sargeant, 2012). For these reason, I have discussed findings from organisational research and other higher education courses, but prioritised research in medical education, where possible and if available.

Data collection: Many studies used self-reported data, such as questionnaires completed by clinicians on their own experiences of learners seeking feedback or learners' self-reported experiences of feedback-seeking. However, it is difficult to measure FBSB. Some studies tried, through measuring the number of WPBAs completed (de Jong *et al*., 2017; Gaunt *et al*., 2017b), but this ignores faculty requesting to complete WPBA or even the decision to complete being a two-way process (Bok *et al*., 2016). Qualitative studies have overcome this by triangulating students' perspectives with staff data (Delva *et al*., 2013; Ramani *et al*., 2018a).

Sampling: I found there were many quantitative studies which use poorly validated questionnaires, have insufficient participants to achieve statistical significance, poor response rates to questionnaires, or measure concepts which can be challenging to measure using their basic quantitative tools. Authors describe challenges recruiting enough participants for quantitative studies. Some qualitative studies

use a pre-selected population, for example learners who have already proactively sought feedback (Henry *et al*., 2018), to participate, which lends bias to their findings. There are also a number of low quality qualitative studies which do not clearly describe analysis, maintaining rigour or generating theory. Some only describe analysis as using "standard qualitative procedures"(Milan *et al*., 2011) and do not adequately describe methods or analysis.

2.2.4 Inclusion and exclusion criteria

Table 3: Inclusion and exclusion criteria

Inclusion criteria	Justification
Included if the article contains information on feedback-seeking	This is the selected area of study
Research study	I aimed to take an evidence-based approach, so excluded commentaries and opinion articles
Literature reviews – systematic or narrative	Only if sufficient quality, with clearly outlined search strategy, databases searched and inclusion/exclusion criteria
Population: prioritised medical or veterinary education, then higher education, then general education (including school), then organisation and business contexts. This table only included medical / vet education (not including osteopathy)	
No restriction on whether the article was from the UK or elsewhere, although UK based research papers were prioritised,	Other countries having different populations of students (e.g. some are postgraduate), and different training. However, this is a relatively new subject in medical education and a large proportion of well-designed studies originated outside the UK (especially Netherlands).

Exclusion criteria used were as follows:

- Excluded if the article is on passively receiving feedback or staff giving feedback with no reference to feedback-seeking
- Opinion articles, commentary articles and case studies

- Commentary articles which were not clear narrative reviews with well-defined search strategies but were theoretical papers providing a different perspective on the current literature available
- Articles written in languages other than English

2.2.5 Assessing quality of papers

When reviewing papers for this thesis, I assessed the quality of each paper. I used criteria outlined by Buckley (Buckley *et al.*, 2009), which I modified. As these criteria only allow binary scores, with no allowance for excellence in one area but mediocrity in another, I did not score each criteria individually but gave a total mark of poor, average or good for each paper. I only included papers scored average or good in the literature review. The original criteria had 11 domains. I have included a 12th domain – if there are other studies which can support or refute the findings, to encourage comparison and analysis of other literature available.

Table 4: Criteria used to assess quality of papers reviewed

Criteria (modified from (Buckley *et al.*, 2009)
1. Is there a clear research question or hypothesis
2. Is the study group (number, characteristics, selection, homogeneity) appropriate for the study
3. Are the data collection methods (qualitative or quantitative) reliable and valid for the research question and context
4. Completeness of data (drop-outs etc.)? Attrition rate less than 50% or questionnaire response rate over 60%
5. Control for confounding factors/ variables
6. Appropriate analysis of results (statistical or otherwise)
7. Do the data justify the conclusions drawn
8. Reproducible by other researchers
9. Prospective rather than retrospective
10. Do the authors address all relevant ethical issues
11. Were the results supported from data by more than one source within the study
12. Are there other studies which support or refute these findings?

I rated the quality as follows:

- Poor: 6 or below
- Average: 7-9
- Good: 10-12

2.2.6 Papers included

Table 5 below lists the papers which were included in the final literature review and appendix 4 gives a more detailed summary of each paper along with a detailed quality criteria scoring table.

I have also noted if the paper is particularly useful, even if it is rated "average", if it adds particularly useful new knowledge.

Table 5: List of papers included

	Paper	Rating according to criteria	Score	Quality	Key paper
1	(Al-Mously *et al.*, 2014b)	**Undergraduate medical students' perceptions on the quality of feedback received during clinical rotations**	8	Average	No
2	(Bing-You *et al.*, 2018)	**The Art (and Artifice) of Seeking Feedback: Clerkship Students' Approaches to Asking for Feedback**	10	Good	Yes
3	(Bok *et al.*, 2013b)	**Clarifying students' feedback-seeking behaviour in clinical clerkships**	10	Good	Yes
4	(Bok *et al.*, 2016)	**Feedback-giving behaviour in performance evaluations during clinical clerkships**	8	Average	Yes
5	(Bose and Gijselaers, 2013)	**Why supervisors should promote feedback seeking behaviour in medical residency**	6	Poor	No
6	(Bowen *et al.*, 2017a)	**Medical Student Perceptions of Feedback and Feedback Behaviours Within the Context of the "Educational Alliance"**	8	Average	Yes
7	(Cahill *et al.*, 2015)	**'I wouldn't get that feedback from anywhere else': learning partnerships and the use of high school students as simulated patients**	n/a	Insufficient relevance	No

		to enhance medical students' communication skills. Did not score- insufficient relevance. Paper focusses on simulation communication skill rather than feedback seeking.			
8	(Cassidy *et al.*, 2017)	**'Seeking authorization': a grounded theory exploration of mentors' experiences of assessing nursing students on the borderline of achievement of competence in clinical practice.** Did not score- insufficient relevance. Focussed on mentors rather than learners. Exploring how nurses decide to fail borderline students, little on feedback seeking.	n/a	Insufficient relevance	No
9	(Chaudhry *et al.*, 2019)	**Perioperative Teaching and Feedback: How are we doing in Canadian OTL-HNS programs?**	6	Poor	No
10	(Crommelinck and Anseel, 2013a)	**Understanding and encouraging feedback-seeking behaviour: a literature review**	9	Good	Yes
11	(de Jong *et al.*, 2017)	**Students' motivation toward feedback-seeking in the clinical workplace**	5	Poor	No- published too late
12	(Delva *et al.*, 2013)	**Encouraging residents to seek feedback.**	11	Good	Yes
13	(Fu *et al.*, 2019)	**'I did not check if the teacher gave feedback': a qualitative analysis of Taiwanese postgraduate year 1 trainees' talk around e-portfolio feedback-seeking behaviours**	10	Good	No – too late

14	(Garner *et al.*, 2014a)	**The positive effect of immediate feedback on medical student education during the surgical clerkship.**	5	Poor	No
15	(Gaunt *et al.*, 2017a)	**Surgical trainee feedback-seeking behaviour in the context of workplace-based assessment in clinical settings**	9	Average	Yes
16	(Gaunt *et al.*, 2017b)	**'Playing the game': How do surgical trainees seek feedback using workplace-based assessment?**	10	Good	No
17	(Gaunt *et al.*, 2018)	**Exploring the Role of Self-Motives in Postgraduate Trainees' Feedback-Seeking Behaviour in the Clinical Workplace**	9	Average	No
18	(Gratrix and Barrett, 2017)	**Desperately seeking consistency: Student nurses' experiences and expectations of academic supervision.**	6	Average	No
19	(Henry *et al.*, 2018)	**Motivation for feedback-seeking among pediatric residents: a mixed methods study**	3	Poor	No
20	(Hofmann *et al.*, 2009)	**Seeking help in the shadow of doubt: the sensemaking processes underlying how nurses decide whom to ask for advice.**	n/a	N/A Unable to retrieve	N/A

		146 nurses "seeking help". Abstract has insufficient detail and unable to retrieve full article so unable to score.			
21	(Ingwersen *et al.*, 2017)	**Perceptions of fieldwork in occupational therapy.**	2	Poor	No
22	(Janssen and Prins, 2007a)	**Goal orientations and the seeking of different types of feedback information*.***	6	Average	Yes
23	(Mann *et al.*, 2011a)	**Tensions in informed self-assessment: how the desire for feedback and reticence to collect and use it can conflict.**	11	Good	Yes
24	(McGhee *et al.*, 2017)	**Do Emergency Medicine Residents Prefer Resident-initiated or Attending-initiated Feedback?**	4	Poor	No
25	(Milan *et al.*, 2011)	**How am I doing?" Teaching medical students to elicit feedback during their clerkships.**	7	Average	No
26	(Murdoch-Eaton and Sargeant, 2012)	**Maturational differences in undergraduate medical students' perceptions about feedback: Maturation in feedback perception.**	11	Good	Yes
27	(Oktaria and Soemantri, 2018)	**Undergraduate Medical Students' Perceptions on Feedback-Seeking Behaviour.**	7	Average	No
28	(Pal *et al.*, 2014)	**Utilising feedback from patients and their families as a learning strategy in**	8	Good	No

		a Foundation Degree in palliative and supportive care: a qualitative study.			
29	(Ramani *et al.*, 2017)	**Uncovering the unknown: A grounded theory study exploring the impact of self-awareness on the culture of feedback in residency education**	10	Good	No- too late
30	(Ramani *et al.*, 2018b)	**About Politeness, Face, and Feedback: Exploring Resident and Faculty Perceptions of How Institutional Feedback Culture Influences Feedback Practices**	12	Good	No – too late
31	(Rassbach *et al.*, 2019)	**The effect of faculty coaching on resident attitudes, confidence and patient-rated communication: a multi-institutional randomized controlled trial.**	4	Poor	No
32	(Ravik *et al.*, 2017a)	**Defining and comparing learning actions in two simulation modalities: students training on a latex arm and each other's arms.**	8	Average	No
33	(Robertson and Fowler, 2017)	**Medical Student Perceptions of Learner-Initiated Feedback Using a Mobile Web Application**	4	Poor	No
34	(Teunissen and Bok, 2013)	**Believing is seeing: how people's beliefs influence goals, emotions and behaviour.**	n/a	Insufficient relevance so not included	No

		Insufficient relevance- not a clear literature review on feedback seeking. Good summary of literature on self-assessment in med ed. Overall easy to understand but very few med ed studies included. No search strategy outlined. Narrative review article on self-theories and their impact on FBSB. Studies on GO are from organisational psychology and general higher education, rather than medical education.			
35	(Teunissen *et al.*, 2009a)	**Who wants feedback? An investigation of the variables influencing residents' feedback-seeking behavior in relation to night shifts.**	10	Good	Yes
36	(Warman *et al.*, 2014)	**Initiatives to improve feedback culture in the final year of a veterinary program.**	5	Poor	No

I will start my discussion of the findings of my narrative review by defining feedback-seeking behaviour and its benefits.

2.2.7 PRISMA flow chart

Identification of studies via databases and registers

Identification

Records identified from Medline: 726
Records identified from Scopus: 759
Records identified from Pubmed: 215

→

Records excluded manually based on title due to duplication or ineligibility:

Medline: 680
Scopus: 728
Pubmed: 185

Screening

Records screened based on abstract:
Medline: 46
Scopus: 31
Pubmed: 30

→

Records removed due to relevance or ineligibility: 70

Reports sought for retrieval
(n = 37)
These papers are discussed in table 3 of the appendix

→

Reports not retrieved
(n = 1)

Reports assessed for eligibility: 36

→

Reports excluded: 14
    Not relevant: 4
    Insufficient quality (table 2 of appendix): 10

Included

Studies included in review: 22
These are discussed in detail in table 3 of the appendix

2.3 What is feedback-seeking behaviour (FBSB)?

Feedback-seeking in the workplace is when the learner attempts to actively determine the appropriateness and adequacy of their behaviour in order to achieve their goals (Ashford, 1985) and can be defined as a:

> *"…conscious devotion of effort toward determining the correctness and adequacy of behaviours for attaining valued end states" (Ashford, 1986b)*

Ashford and Cummings (1986; 1983a) describe feedback-seeking as a resource which learners use to improve skills, performance or chances of promotion and adapt according to their environment, goals,

motivations, perceived benefits and costs (Crommelinck and Anseel, 2013b). The benefits and consequences of feedback seeking have been explored in business and management and is only recently being studied in medical education. There is emerging evidence demonstrating its importance on improving motivation, engagement and learning (Crommelinck and Anseel, 2013b).

2.3.1 Feedback-seeking can overcome some challenges with feedback

Feedback needs to engage the learner to be effective in changing behaviour, it is not about just telling the learner (*et al*., 2013b; Butler and Winne, 1995a; Carless *et al*., 2011; Nicol and Macfarlane-Dick, 2006a). Learners who actively invest time and effort in seeking feedback will be more engaged with the feedback. Furthermore, actively seeking feedback could help overcome some of the challenges with receptivity. Learners are more likely to recognise they are receiving feedback if they have asked for it and therefore expect it. They are also more likely to ask someone they perceive to be credible.

2.4 How learners ask for feedback

Two methods of feedback-seeking have been described; inquiry and monitoring (Ashford and Cummings, 1985). Inquiry is when the learner directly asks for feedback but can be inhibited by the perceived costs, for example if the student does not wish to burden their supervisor. Monitoring involves observing the situation, environment and other people's behaviour to determine their own performance and is more likely to be used if the learner perceived a high cost of seeking feedback (Teunissen *et al*., 2009b). However, monitoring can also risk misinterpretation of verbal and non-verbal cues so may not be as successful.

2.5 Other benefits of seeking feedback

I have already discussed that encouraging feedback seeking can help overcome the challenges of feedback receptivity and recognition. Literature suggests that FBS may also improve learning (Garner *et al*., 2014b; Teunissen *et al*., 2009b), motivation and performance (Chen *et al*., 2007; Renn and Fedor, 2001) and learners may view the feedback they proactively seek as having more value.

2.5.1   Learning

Few studies have directly examined the association between seeking feedback and actual learning (Crommelinck and Anseel, 2013b). Garner (2014) used a crossover study to explore the perceived benefits of seeking feedback on undergraduate American medical students, comparing two weeks of proactively seeking feedback daily with 2 weeks of students behaving as they normally would. Students recorded quantity and quality of feedback and clinicians rated each student on their performance, improvement and professional relationship with each other. While clinicians reported

that students who sought feedback developed better knowledge and skills than those who did not, this was not reflected in students' self-assessment. This study also didn't take into account feedback spontaneously received or changes in seeking feedback, which might have developed in students who sought feedback in the first arm. The limitations of this study are described in the appendix.

DeStobbeleir (2011) found a relationship between seeking feedback and developing creative behaviour and new perspectives on situations, which is relevant to medicine to encourage students to think laterally in clinical reasoning. In organisational psychology, Yanagizawa (2008) also found a positive relationship between feedback seeking and learning, while Hwang and Francesco(2010) did not.

2.5.2 Performance

Some studies suggest feedback seeking can improve performance in the context of business and management (Ashford and Tsui, 1991; Chen *et al*., 2007; Renn and Fedor, 2001). For example, Renn (Renn and Fedor, 2001) demonstrated improved performance in a study in business, with increased sales revenue in salespeople who sought feedback. Morrison concluded that seeking feedback improved performance by reducing uncertainty and encouraging a more positive attitude towards the job (Morrison, 2002). No studies have demonstrated this in medical education however (Crommelinck and Anseel, 2013b; Garner *et al*., 2014b; Teunissen *et al*., 2009b).

2.5.3 Integration and Socialisation

Seeking feedback can promote integration into new environments, allowing learners to clarify their role in the organisation (Morrison, 1993, Garner *et al*., 2014). This could be advantageous for medical students, where attachments can only be a few days or weeks long.

(Garner *et al*., 2014b) concluded that medical students who sought feedback reported receiving increased feedback sessions, so felt more comfortable in their attachment compared to students who did not. However, as American medical students enter the course as a postgraduate, they may have further developed learning skills in their previous degree, reducing transferability to UK students. Other than this study, there is little else in medical education literature on how feedback seeking can develop better integration into the clinical environment.

2.5.4 Value of feedback sought

Learners who passively receive feedback often perceive this feedback to be insufficient or lack value (Al-Mously *et al*., 2014b; Gil *et al*., 1984; Sender Liberman *et al*., 2005b). As discussed in the background chapter, one of the challenges with feedback is that learners may respond in a way that does not improve learning or utilise feedback appropriately. They may ignore or misinterpret the feedback or perceive it to be irrelevant.

If a learner views the feedback as being more valuable, they are more likely to utilise it effectively to improve (Ashford, 1986b). Bowen (2017a) explored this in undergraduate UK medical students, using a grounded theory study to investigate how they recognise, seek and use feedback. Senior students were more likely to consciously seek feedback and perceived that feedback to be more valuable, while junior students viewed themselves as recipients of feedback and perceived passive feedback was "*better*" because it was given without asking for it. Junior students felt it was the medical school's responsibility to motivate them to use feedback and thought engaging with feedback should be incentivised, while senior students were more likely to be self-directed when using the feedback.

In summary, seeking feedback can help overcome some of the challenges of receiving feedback passively because the learner is more likely to recognise they are receiving feedback, will be more engaged and receptive to that feedback and will perceive the feedback giver to be more credible. Some studies also suggest they will perceive that feedback to be more valuable and it could help develop better integration when students change attachments.

2.5.5 How does this apply to EMS

Having discussed the benefits of feedback-seeking, I conducted a preliminary questionnaire (questionnaire 3 in appendix) to ask students in years 1, 3 and 5 to self-report if they proactively sought feedback, rather than waiting to receive it. 207 students completed the questionnaire (29% response rate). The self-reported results indicated that students in earlier years were less likely to feedback-seek than senior years (figure 5). These findings are similar to those described in the literature (Bowen *et al*., 2017a; Murdoch-Eaton and Sargeant, 2012). However, although senior students were more likely to seek feedback, less than half of final year students claimed they sought feedback always/most of the time. Given the benefits of feedback-seeking, it is vital to consider why younger students did not seek feedback as often, why they developed the propensity to feedback-seek as they progressed through the course and why, even in final year, a significant number of students did not seek feedback as often as they could. I did not get sufficient questionnaire responses (207 out of a potential 720 students, 29% response rate) to draw solid conclusions from this questionnaire but it was useful preliminary work to apply for ethics approval and for my study.

Figure 4: Self-reported feedback-seeking in years 1, 3 and 5 in EMS
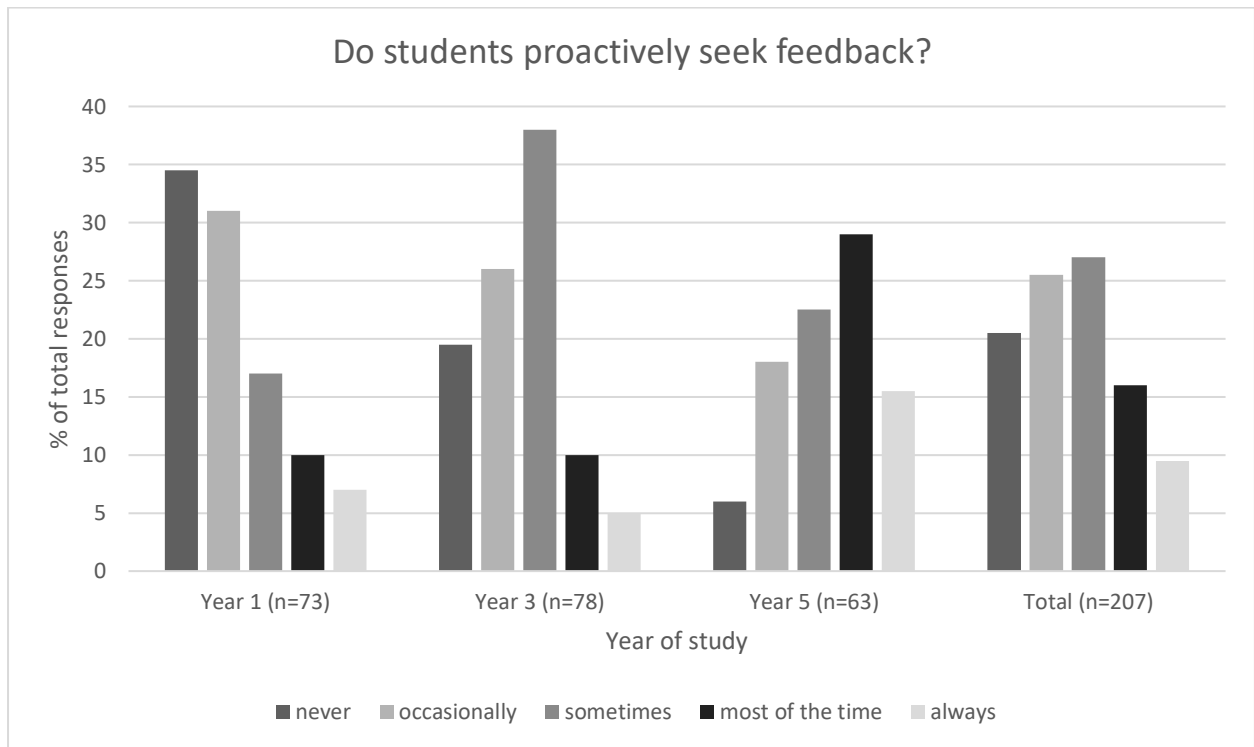
3 Development of this research project

3.1 Introduction

The previous sections have outlined the importance of feedback in learning, but students feel they get insufficient useful feedback. Feedback-seeking can help overcome some of the challenges with giving and receiving feedback by improving recognition and receptivity to feedback.

Feedback improves learning and performance

⬇

Learners (including students at EMS) feel they do not get enough feedback

⬇

There are a number of challenges with receiving and giving effective feedback

⬇

Feedback-seeking can help overcome these feedback challenges

⬇

Development of this research project
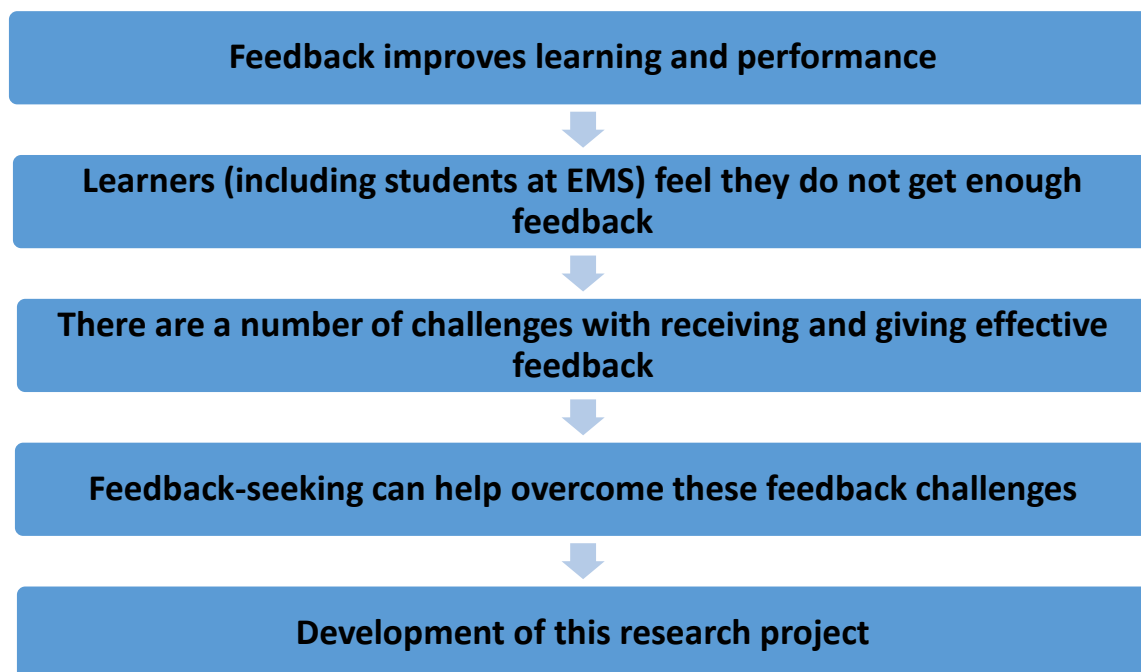
3.2 Development of this research project

This research project was developed to build upon the author's interests in medical education, in particular assessment and feedback. The author has experience of giving and receiving feedback as a trainee and as an educator. These experiences have been wide and varied, with some experiences being incredibly powerful in shaping my career. In contrast, other experiences of receiving feedback were poor and even occasionally demotivating or bewildering, despite how well meaning the feedback giver's intentions were! I wanted to consider how these feedback experiences could have been made more useful and what could I have done to contribute to this.

Feedback is extremely important in improving learning and performance, but only if delivered effectively, and there are a significant number of challenges with receiving and giving effective feedback. As a result, many learners, including students at Edinburgh Medical School, feel they do not receive enough useful feedback. Most of the literature on feedback is teacher-centred, when in reality

students may actively seek feedback. Feedback-seeking can help overcome some of the challenges associated with delivering and receiving effective feedback. I therefore wished to consider a more student-centred approach to feedback.

3.2.1   Overall research question

Medical students at EMS are more likely to seek feedback as they progress through the course, and this replicates findings described in the literature discussed earlier. However, although final year students seek more feedback than junior students, a large number still don't seek feedback frequently.

I therefore wanted to consider why junior students did not seek feedback as often as senior students and how we, as an educational organisation, could develop feedback-seeking behaviour in the clinical environment to maximise learning.

Research Question:

How can we promote development of feedback-seeking behaviour?

Section 2

4 Review of the literature: The enablers and barriers of feedback-seeking

4.1 Introduction

Feedback improves learning and performance

⬇

Learners (including students at EMS) feel they do not get enough feedback

⬇

There are a number of challenges with receiving and giving effective feedback

⬇

Feedback-seeking can help overcome these feedback challenges

⬇

Despite this, students do not often seek feedback, with junior students seeking less feedback than senior students

⬇

Overall Research Question: How can we promote development of feedback-seeking behaviour?

This chapter reviews the literature about enablers and barriers of feedback seeking, summarising the main concepts and identifying key gaps in our understanding to inform the focus and direction of my research. I have already outlined my search strategy in chapter 2, and inclusion and exclusion criteria in the appendix. This chapter will conclude by describing key gaps in current knowledge and how I aim to add to this.

4.2 What influences feedback seeking

Despite the benefits of feedback seeking described in this chapter, learners do not often proactively seek feedback. Al-Mously's (Al-Mously *et al.*, 2014a) self-reported questionnaire study (overseas medical school) estimated that 85-95% of students did not seek feedback in the clinical workplace, and the self-reported questionnaire I conducted in EMS (figure 5) demonstrated slightly better

feedback seeking behaviour but students still reported seeking feedback infrequently, with junior students being less inclined to seek feedback than senior students.

4.2.1 Age and Experience

Two studies in UK UG medical students have described the development of feedback seeking behaviour as students get more experienced and older. Bowen's grounded theory study (Bowen *et al.*, 2017a) concluded that feedback seeking behaviour developed as students progressed through the course, and junior students felt they needed incentives to motivate them to engage with and use feedback. Similarly, another study by Murdoch-Eaton (2012) demonstrated that the skills to seek feedback developed and improved as students became more confident and experienced throughout their undergraduate course. This was a mixed-methods study to look at students' perceptions of feedback, and found that students transitioned from passively expecting feedback from teachers to actively seeking and using the feedback to change their learning as they became more senior.

This has also been explored outside the UK. In America, Ramani's (2018) qualitative medical education study on postgraduate trainees also found that senior trainees sought feedback more than junior ones. However, Al-Mously (2014) found more sixth year students had poor feedback seeking behaviour than fifth year students. This study was conducted in the Middle-East, with different cultures, training and gender break-down, and the study was designed to explore feedback rather than feedback seeking behaviour.

In contrast, Anseel's meta-analysis (Anseel *et al.*, 2015) concluded that in an organisational environment, as individuals become more experienced and comfortable in their position in their organisation and as they get older, they seek less feedback.

4.2.2 Why we can't apply findings from organisational psychology to medical education

Although feedback-seeking has been explored in organisations, the disparity of feedback seeking behaviour increasing as learners become more experienced in medical education but decreasing as learners get more experienced in organisations, illustrates why we can't extrapolate findings from organisational psychology to learners in medical education. Furthermore, the learning environment in medical education is different to many other higher education courses. Medical students gain a majority of their learning in hospitals or GP practices, where the main priority is delivery of patient care and not teaching. They are taught primarily by practising clinicians whose main role is generally patient care, in addition to management, quality improvement and other activities in addition to teaching. The needs of the patient will be prioritised over the needs of the learner. This makes medical

education a different context to most other higher education courses, so it is sensible to be cautious when extrapolating findings from other educational contexts to a medical education learning environment. For these reasons, I have focussed this review on the influences of feedback seeking in a medical education context, quoting papers in other contexts if little evidence in medical education exists.

4.3   Other individual factors

Having described the relationship between experience and propensity to seek feedback, I will now describe other influences of feedback seeking described in the literature.

Feedback seeking is influenced by the interaction of different factors and no single factor directly influences or discourages the learner's decision on whether or not to seek feedback (Anseel *et al*., 2007a). Ashford and Cummings (1983b) hypothesised that when a feedback-seeker is considering whether to seek feedback, they weigh the costs and benefits of seeking feedback at that particular time and consider if the perceived value of feedback sought outweighs the potentially perceived negative consequences.

There have been no systematic literature reviews on feedback seeking behaviour in medical education but Crommelinck (2013) conducted a narrative review exploring various aspects of feedback-seeking, including what influences feedback seeking behaviour. Due to paucity of literature at the time, they also included non- medical education literature. The authors described a number of influences on feedback seeking behaviour:

a) Individual factors: includes propensity to seek external feedback, feedback orientation, learning goal orientation, performance / performance expectations, tolerance for ambiguity, age and experience, self esteem

b) Context and environmental factors: include level of uncertainty, publicness of feedback seeking, effort, organisational socialisation

c) Feedback sign (if positive or negative feedback) and diagnosticity (whether feedback will improve performance)

d) Target of feedback seeking attempt: includes relationship quality, availability, approachability, and mood.

I will now discuss these in more detail and incorporate more up-to-date literature where available.

4.3.1 Benefit versus cost of attempts to seek feedback

Teunnissen (2009a) studied FBS in Dutch postgraduate medical trainees and found that trainees sought feedback more frequently if they predicted more benefit from seeking feedback. However, if they perceived there would be more cost than benefit of seeking feedback they were more likely to observe the behaviours and environment around them rather than actively seeking feedback. While this quantitative study found that residents' feedback seeking behaviour was affected by perceived cost benefit ratio, it did not explore the different types of perceived costs and benefits on seeking feedback and how or why they affected feedback seeking in detail. Bing-You's (2018) study on American medical students found perceived cost of seeking feedback inhibited learners from seeking feedback, but did not explore what these costs were and how they affected learners. However, American medical students are postgraduate and I have already outlined the influence of maturity on feedback seeking behaviour. Bok (2013) found that increased perceived cost influenced how learners sought feedback, and were more likely to do so through monitoring.

The weighing of benefits with costs of seeking feedback is described in Anseel's meta-analysis (2015) of antecedents and outcomes of feedback seeking in organisations. The authors only included studies measuring actual feedback seeking behaviour in organisational contexts, excluding vignettes, case studies and educational, developmental or psychiatric settings contexts. 69 articles met their inclusion criteria. The review describes employees weighing the costs and benefits of seeking feedback, referred to as a "cost-value analysis". Potential perceived benefits may include reducing uncertainty and potential costs include the risk of conveying a negative image to others (Morrison and Vancouver, 2000; Park *et al*., 2007; VandeWalle *et al*., 2000a).

Receiving positive or negative feedback could also increase future feedback seeking (Anseel *et al*., 2015). Feedback seeking through inquiry or monitoring requires effort, either by actively observing the situation and interpreting it or proactively finding someone to seek feedback from. If this effort outweighs the perceived benefits, individuals may be less inclined to seek feedback. Furthermore, if they feel they have already received enough feedback, they will be less motivated to put in the effort to seek further feedback. However, if they have received insufficient feedback so far, they will be more likely to do so (Ashford, 1986b).

4.3.2 Self-assessment

Self-assessment is the process of the learner judging whether or not learner-identified standards have been met and identifying strengths and weaknesses (Boud, 2013), enabling the learner to consider if they are competent enough in a specific task. It enables the individual to act with appropriate confidence and be more resilient to negative feedback and failure without abandoning a task or course

of action early. The ability to identify strengths and weaknesses enables the learner to set appropriately challenging goals that are achievable, yet push the learner to improve (Eva and Regehr, 2005). The ability to self-assess varies depending on task, context and perspective.

Health professionals are poor at accurately self-assessing their own performance and abilities, in particular (Eva and Regehr, 2008, 2005; Sargeant *et al*., 2008) sub-optimal performers tend to overestimate competence. If feedback conflicts with the learner's own self-assessment or perceive the feedback to lack credibility, this difference may become even more marked (Eva and Regehr, 2008, 2005; Kruger and Dunning, 1999; Sargeant *et al*., 2011, 2008). A systematic review of studies explored health professionals' ability to self-assess in 5 countries including the UK (Davis *et al*., 2006), incorporating studies comparing self-assessment measurements with an external measure, such as OSCE performance but excluded studies using self-reported measures and medical students. Out of the 20 studies retrieved, 13 demonstrated little, no or an inverse relationship between self-assessment and the external assessment measurement and 3 found a positive association. One study (Robbins *et al*., 1994) concluded that physicians who rated themselves as proficient at a task were in fact less proficient than their colleagues.

Feedback confirms or refutes the individual's perception about their competence and raises awareness about gaps in knowledge (Archer, 2010; Mann *et al*., 2011b; Sargeant *et al*., 2011, 2010; Srinivasan *et al*., 2007). Therefore, educationalists are now moving towards using the term "informed self-assessment", which describes learners using internal self-assessment and external information, such as feedback, to generate a self-appraisal.

Self-assessment can inhibit how the learner uses feedback if the feedback does not match their own perception of their performance (Mann *et al*., 2011b). As previously described, learners experience a dichotomy between the benefits and costs of feedback seeking. Their desire for feedback to know how they are doing conflicts with their fear of learning they are not performing as well as they should, described in some literature as "*tensions*" (Mann *et al*., 2011b). This can make feedback difficult to seek, hear, accept, reflect on and utilise to improve self-assessment and performance. This therefore also impacts indirectly on informed self-assessment (and therefore on self-regulation, which is described later).

The above studies have described clinicians' inaccuracy at self-assessment and that feedback can improve this, unless feedback does not match the learner's own perceptions of their performance. Ramani (2017) explored the role of seeking feedback in self-assessment in postgraduate trainees, using the Johari window to explain how feedback develops self-awareness. The Johari window

categorises data as known to self and others, unknown to self but known to others, known to self and unknown to others and unknown to self and others. The authors suggested that feedback seeking can develop self-awareness by uncovering information unknown to self but known to others, known as the "blind spot".

In summary, self-assessment requires feedback to improve and become more accurate, but the mismatch between self-assessment and feedback can impact on receptivity to feedback. By seeking feedback, the individual may be more responsive to feedback received as they perceive it to have more value and credibility, so making it easier to utilise it to improve performance, ability and self-awareness.

4.3.3 The role of self-esteem in feedback seeking

Self-esteem is the overall evaluation of the individual's worth, value or importance (Blascovich and Tomaka, 1991), and influences how someone responds to negative feedback.

Feedback contains information about the self, so negative feedback can damage feelings of self-worth and self-esteem (Alicke and Sedikides, 2009; Ashford and Cummings, 1983). This could contribute to learners avoiding (Ashford and Cummings, 1983), distorting or discounting feedback (Ashford, 2003). Learners will therefore weigh the benefits of seeking feedback with the risk to their self-esteem, and so may be less likely to seek feedback (Ashford, 1986; Northcraft and Ashford, 1990) to protect their ego.

There is debate in organisational psychology literature about how self-esteem impacts on feedback (Ashford, 2003; Ilies *et al.*, 2007). Some authors theorise that people prefer feedback that corresponds to their own self-image, so people with low self-esteem prefer negative feedback while people with high self-esteem prefer positive feedback. Others debate that people prefer feedback that enhances their self-image, so people with low self-esteem have a greater preference for positive feedback than high self-esteem individuals, because they have greater need for it and will have a greater impact. Baumeister (1989) concluded that people with low self-esteem avoid engaging with threats to their views of themselves, such as receiving negative feedback which can cause them to have lower feelings of self-worth. In contrast, people with high self-esteem may seek less feedback and rely on themselves to guide behaviour and have a weaker reaction to negative feedback, possibly because they discount it as not being a true reflection of their performance (Ashford, 1986). However, Bernichon (2003) concluded that those with high self-esteem wanted self-verifying feedback, even if it might be negative, while learners with low self-esteem sought positive feedback.

Anseel *et al* (2015) explored the role of self-esteem in feedback seeking in his literature review and concluded that there was a weakly positive relationship between self-esteem and feedback seeking behaviour, possibly because the cost of FBS is higher in someone with low self-esteem due to the potentially negative impact of negative feedback on their feelings of self-worth (Anseel *et al*., 2015; Ashford, 1986).

In the comparatively scarce medical education literature on this topic, learners were less likely to seek feedback if they perceived cost to ego or self-esteem (Bok *et al*., 2013) and are more likely to seek feedback indirectly online, instead of in person, to save-face (Fu *et al*., 2019).

In summary, the role of self-esteem in feedback seeking and the impact of feedback in individuals with high and low self-esteem is unclear. Individuals wanting to seek feedback weigh the costs on self-esteem with the benefits of feedback they may receive. While this has been studied in higher education, there is comparatively little research on the impact of self-esteem on feedback seeking behaviour in medical education literature. This will be discussed further in the section on goal orientation (GO).

4.3.4 Image

Like self-esteem, image can also be enhanced or damaged by seeking feedback. Individuals work with co-workers, supervisors and supervisees, and are sensitive to the opinions of others. They may fear damaging this opinion by seeking feedback in public. Alternatively, the need to maintain self-image may motivate them to seek positive feedback even if it has no informational value, for example after they have performed competently, or by seeking feedback from a source they have a good relationship with (Morrison and Bies, 1991). The individual may be concerned that the feedback-giver may perceive the feedback-seeker's desire for feedback may affect the feedback givers opinion of the feedback seeker (Ashford, 2003). In medical education, Eva's (2012b) study described similar findings, where participants had to balance the benefits of seeking feedback which could potentially lead to improvement with the potential costs of fear of "looking stupid", appearing vulnerable and losing face with colleagues, supervisors or trainees.

4.3.5 Self-regulated learning

4.3.5.1 What is self-regulated learning (SRL)

Self-regulated learning (SRL) is the process of proactively monitoring the individual's own performance and learning, and seeking information and creating opportunities to learn to achieve academic goals. The learner creates feedback from their surroundings and the environment to monitor the effectiveness of their learning methods, reacting to this feedback and altering behaviour (Zimmerman,

1990, 1989a, 1989b). It also describes the extent students regulate their thinking, motivation and behaviour during learning (Pintrich and Zusho, 2002) and is manifest through active processes including setting learning goals, the strategies used to achieve these goals the effort exerted and the reaction to external feedback. The higher the ability to self-regulate, the more able the learner is at interpreting using the external feedback they receive to achieve their goals (Butler and Winne, 1995b).

A number of SRL models have been described in the literature, and while their terminology varies, the essential definitions are similar (Puustinen and Pulkkinen, 2001). However, Zimmerman, Pintrich and Boekarts (Boekaerts, 1992; Pintrich and De Groot, 1990; Zimmerman, 1989a), put more emphasis on SRL as an intrinsically motivated and goal-orientated process involving monitoring, regulating and controlling the learner's own learning.

For the purposes of this thesis, I have used Zimmerman's model of SRL, which draws on many of the self-efficacy and social cognitive theories explored by Bandura (Bandura, 2001, 1991; Bandura and Wessels, 1997, 1994), describing SRL as a cycle of utilising external feedback and self-assessment of their own previous performances and the results produced to proactively make adjustments to goals and strategies for future learning opportunities. Zimmerman defines self-regulation as:

> *"self-generated thoughts, feelings and actions that are planned and cyclically adapted to the attainment of personal goals' (Zimmerman 1989)*
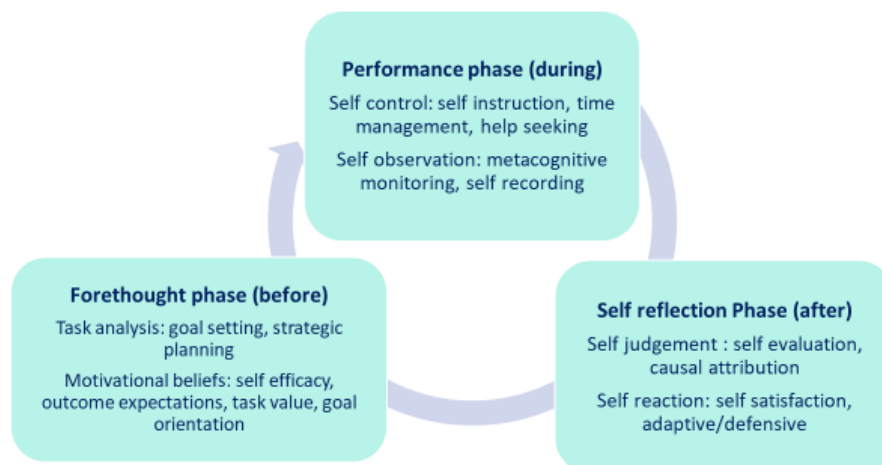
Zimmerman & Campillo 2003, Zimmerman and Moylan 2009

Figure 4 The Self-Regulated Learning Process

Undergraduate learners with well-developed SRL skills perform better and are more engaged, while poor performance is associated with poorly developed SRL, as learners use ineffective strategies for learning and coping with failure. (Artino Jr *et al*., 2011; Patel *et al*., 2015; Pizzimenti and Axelson, 2015). Weak performance is likely to continue throughout the undergraduate degree if not addressed (Gonnella *et al*., 2004) using strategies to improve SRL skills (Cleland *et al*., 2013; Winston *et al*., 2010). Berkhout (2017) performed a qualitative study using data collected from interviews on 14 undergraduate medical students, exploring how their SRL is affected by others. Students self-reported improvement in SRL by clarifying their role, helping set goals, promoting learning opportunities and reflection. Less experienced students needed support from senior clinicians and peers to help develop SRL, while more experienced students were able to proactively use others to help self-regulate their own learning and were less susceptible to the influences of other people.

4.3.5.2   The role of feedback in SRL

Self-regulated learners perceive effective feedback to be valuable for learning (Nicol and Macfarlane-Dick, 2006b) and effective feedback can improve SRL by:

- helping clarify what good performance is (goals, criteria, expected standards)
- facilitating the development of self-assessment (reflection) in learning
- delivering high quality information to students about their learning
- encouraging teacher and peer dialogue around learning
- encouraging positive motivational beliefs and self-esteem
- providing opportunities to close the gap between current and desired performance
- providing information to teachers that can be used to help shape teaching

Theoretically, more self-regulated learners may be more likely to seek feedback as a strategy to establish where they are now and how to achieve their desired goal.

4.4   Motivation

4.4.1   What is motivation and why is it important

Many theories have been proposed to explain motivation as a concept (Schunk *et al*., 2008) but there is disagreement and overlap with concepts. They can also be confusing to understand because some use the same vocabulary for different concepts or different vocabulary for the same concept (Kusurkar *et al*., 2011a; Murphy and Alexander, 2000; ten Cate *et al*., 2011a). Known motivational theories include Maslow's hierarchy of needs, Murray's Need to Achieve Theory, Atkinson's Expectancy – Value Theory, Weiner's Attribution Theory, Bandura's Social Cognitive Theory (Bandura, 2011), Goal

Orientation Theory (Dweck and Molden, 2000; Dweck and Leggett, 1988) and Ryan and Deci's Self Determination Theory (Deci and Ryan, 1985; Ryan and Deci, 2000a). As there are so many theories on motivation, for the purposes of this research I will only consider three theories as there is already some evidence of their application to medical education in the literature.

Ryan and Deci (Ryan and Deci, 2000a) view motivation as a continuum, with intrinsic motivation at one end of the spectrum and lack of motivation at the other. Intrinsic motivation refers to when the learner performs a task for personal interest or personal enjoyment, for community contribution, personal growth, health, affiliation or personal satisfaction. Extrinsic motivation refers to when the individual performs a task for reward or to avoid loss, for example status, money or to provide external manifestations of self-worth (Vansteenkiste *et al*., 2006). A study exploring motivation in UK medical students reported intrinsic motivating factors to learn also include the desire to be a good doctor and not harm patients and interest in medicine, and extrinsic motivating factors to include social competition and assessment (Mattick and Knight, 2009).

High motivation, particularly intrinsic motivation, is associated with better productivity, academic performance, achievement and well-being (Kusurkar *et al*., 2011a; Reeve, 2002). Kusurkur's (2011b) literature review explored variables that influence motivation . Static variables include age, gender, ethnicity, socioeconomic status and year of the medical course, with more junior students being driven by extrinsic motivating factors and senior students being more intrinsically motivated. Intrinsic motivation could be increased through increasing autonomy, patient responsibility and task value, competence, relatedness, knowledge acquisition, increased self-efficacy and well-being. Assessing against pre-set standards was also described to increase intrinsic motivation.

The next section discusses several motivational theories, how motivation impacts on learning and how it could be affected by feedback and feedback seeking. Where possible, I have drawn from literature in medical education rather than general education, business and management psychology as medical students are already highly motivated on entry into medical school, and unlike general education, the course works towards one highly specific vocational career (ten Cate *et al*., 2011b).

4.4.2   Extrinsic motivation

Extrinsic motivation describes when the individual is driven to perform a task by an external driver, such as money or exam performance, or by penalties if they do not complete a task, such as failure to progress.

Extrinsic motivation is composed of four stages (ten Cate *et al*., 2011b):

- External regulation (eg conforming to a rule that one does not accept as valid, but because of pending punishment)

- Introjected regulation (accepting a rule made by others)

- Identified regulation (understanding the significance of a rule made by others)

- Integrated regulation (connecting rules to own norms and values)

There is inconsistency in the literature about how motivation related to feedback seeking (Crommelinck and Anseel, 2013) so I have explored this further. I will now describe three intrinsic motivational theories relevant to this thesis:

- Self-motives theory

- Self-determination theory (SDT)

- Goal-orientation theory (GO)

4.4.3 Self-motives theory

The self-motives theory, proposed by Sedikides and Strube (Sedikides and Strube, 1997) is one theory of intrinsic motivation. Crommelinck and Anseel (Crommelinck and Anseel, 2013) proposed that the self-motives framework could explain an individuals' motivation to seek feedback. The four components of the self-motive theory are as follows (Anseel *et al*., 2007a; Sedikides and Strube, 1997):

1. **Self-assessment**: the individual seeking feedback in order to obtain accurate information about their performance and ability to help them see themselves as they really are (i.e. diagnostic feedback). See below for more about self-assessment.

2. **Self-improvement**: the individual seeking feedback to improve their performance and ability.

3. **Self-enhancement**: the individual seeking feedback to present a favourable image to others and put themselves in a positive light, even if the feedback is inaccurate.

4. **Self-verification**: seeking feedback to confirm their own views about their performance, for example individuals with high levels of certainty are more likely to seek this type of feedback (Anseel *et al*., 2007b).

Gaunt (2018) explored motivation to seek feedback in 42 UK surgical trainees using focus groups using the self-motives theory. They study concluded that trainees who have a positive relationship with senior clinicians will seek feedback from them for self-assessment or self-improvement. They used WPBA to seek feedback for self-enhancement and self-verification, or sought feedback without WPBA if their motives were self-improvement and self-assessment.

Anseel (Anseel *et al.*, 2007b) further reviewed this theory, incorporating additional reviews of the literature (Ashford, 2003; Morrison, 2002), concluding motivation to seek feedback can be classed into three motives:

1. **Instrumental motive** – the individual seeks feedback to meet goals and regulate behaviour.
   In organisational research, there is inconsistency about the role of uncertainty in FBSB. While some research concludes that a degree of uncertainty is required to encourage individuals to FBS (Ashford *et al.*, 2003), other research has suggested that the more uncertainty an individual experiences, the less they seek feedback and vice versa (Ashford, 1986b) and that feedback seeking does not always reduce uncertainty but may even increase it (Ashford, 1988). There is very little literature in medical education to support either conclusion.

2. **Ego**: the individual seeks feedback to support the ego but avoids feedback which threatens the ego. Some organisational psychology research suggests that an individual may be reluctant to seek feedback if there is a risk to their self-esteem and ego (Anseel *et al.*, 2007a), while other research suggests positive, negative or little relationship between ego and feedback seeking behaviour. Again, there is very little in medical education to support either perspective.

3. **Image-based**: the individual seeks feedback to protect or enhance their public image. Yet again there is little in the medical education literature exploring this.

While this framework draws from research conducted in business and organisational psychology literature, there is little research exploring this or confirming its application in medical education.

4.4.4 Self-Determination Theory

Self-determination theory (SDT) (Ryan and Deci, 2000b) postulates that intrinsic motivation requires the learner to experience feelings of:

- **Autonomy**- the individual is free to decide their own behaviour and actions
- **Competence**- the individual feels capable of performing a task based on their own confidence and self-assessment of how well they can perform that task
- **Belonging or relatedness**- feeling accepted and valued by the social group, including peers, senior tutors and patients.

Self-determination (SD) is not static but can be driven in either direction on the continuum, so extrinsic motivation can transform into intrinsic motivation and vice versa. By increasing feelings of competence, autonomy and belonging, motivation can be changed from extrinsic to intrinsic (Kusurkar

et al., 2011a). According to the SDT, if an individual initially chooses to perform an action driven by an external factor and it improves autonomy, competence or belonging, without further external incentives this will naturally progress through the continuum to become an intrinsically motivated action. For example, SD is increased through encouraging the learner to decide what to learn and accept responsibility for their own learning, encouraging active participation in group activities and providing structured guidance, appropriate learning challenges and emotional support (Kusurkar *et al*., 2011b; ten Cate *et al*., 2011b). However, an external driving factor can undermine progression to intrinsic motivation, so the individual remains extrinsically motivated and puts less effort into the behaviour if the incentive is withdrawn (Deci and Ryan, 1985).

While a number of articles have theorised about the relationship between SDT and feedback seeking behaviour, only one study has explored it in paediatric trainees in America (Henry *et al*., 2018). As this was of insufficient quality to include in this review, I will not comment on the findings.

4.4.5   Goal-Orientation theory

A goal orientation (GO) is a personal goal preference in achievement situations (Dweck and Leggett, 1988). Dweck hypothesised that learners can pursue one of two types of GO.

- **Learning GO (LGO):** The learner aims to acquire new skills and master new situations to develop competence. They remain engaged or even increase effort when faced with a challenging situation.
- **Performance GO (PGO)**: The learner aims to demonstrate and validate their competence, avoiding negative judgements. They perceive ability as fixed and aim to demonstrate their ability, potentially withdrawing or reducing effort when faced with a challenging situation (Dweck and Leggett, 1988).

4.4.5.1   GO influences frequency of feedback seeking and its perceived cost and value

People with a LGO are more likely to seek feedback than people with a PGO, although PGO individuals may still seek feedback when they perceive it as an opportunity to demonstrate their competence to others and make them aware of their successes (Morrison and Bies, 1991). VandeWalle (2003) explored the impact of GO on feedback seeking in organisations and concluded that GO influences how individuals interpret the cost and value of seeking feedback. This affects their decision to seek feedback.

PGO individuals may seek less feedback in a task they are less competent at because of the cost of receiving potentially negative feedback on self-esteem (Butler, 1993) and because feedback seeking

could be make it obvious that they are unable to perform the task well(Anseel *et al.*, 2015). However, those with a high PGO may view feedback as a way to improve performance to outperform others and highlight success, and so may be more likely to seek feedback (Kaplan and Maehr, 2007). They are also more likely to seek feedback in public to improve others' opinion of them if they anticipate positive feedback (VandeWalle and Cummings, 1997).

In contrast, LGO individuals are less concerned about self-preservation and consider the value of the feedback sought (VandeWalle *et al.*, 2000a; VandeWalle and Cummings, 1997). They aim to improve their ability, so seek feedback with the expectation that this would improve their performance (Earley *et al.*, 1990; VandeWalle, 2003). They may also perceive that the feedback they seek has more value (VandeWalle *et al.*, 2000a).

Van de Walle (VandeWalle, 1997) further divides performance goal orientation into:

- **Performance-proving goal orientation**- the learner wishes to demonstrate competence and gain favourable judgement
- **Performance-avoiding goal orientation**- the learner wishes to avoid negative judgements about competence to avoid appearing incompetent.

4.4.5.2   Research on GO in medical education

So far, I have discussed the impact of GO on feedback seeking in organisational research. There is, however, a small amount of medical education research considering the relationship between GO and feedback seeking behaviour.

Janssen (2007) explored the relationship between types of feedback seeking and GO in postgraduate medical trainees in the Netherlands using quantitative questionnaires. The authors concluded that people with a performance-avoiding GO were more likely to seek feedback for self-validation and were driven by fear of failing and appearing incompetent in front of others. They were also more likely to seek feedback for self-improvement, which the authors theorised was motivated by the fear of performing worse than others. There was no relationship with performance-proving goal orientation and seeking self-validation feedback. The authors hypothesised that performance-proving goal orientated people had more confidence in their abilities and competence, which potentially resulted in them worrying less. Bose (Bose and Gijselaers, 2013) also used quantitative questionnaires to explore postgraduate medical trainees' motives to seek feedback and found no association between feedback seeking behaviour and GO, but as this had such low numbers of participants and the study was insufficient quality, so I will not comment on this further.

More recently, Teunnisen (2009) found a relationship between LGO, increased perceived benefit of seeking feedback and reduced cost; and a relationship between PGO and increased perceived cost of

feedback seeking. However, (Gaunt *et al*., 2017a)'s quantitative study exploring feedback seeking behaviour in postgraduate surgical trainees in the UK using WPBA concluded that there was no statistically significant difference between perceived costs or benefits of feedback sought and learners' GO, but learners with PGO perceived high personal cost of seeking feedback and learners with supportive supervision were more likely to demonstrate LGO.

In summary, GO influences frequency of seeking feedback and how individuals interpret the costs and benefits of feedback they receive. In medical education, there are a small number of quantitative studies looking at the relationship between GO and feedback seeking in trainees and these support findings from organisational literature. However, there are no qualitative studies exploring why learners develop a specific GO, how feedback seeking behaviour influences the development of different GOs and why or how GO influences feedback seeking behaviour.

4.5   Confidence

The concept of "confidence" is only just being understood in medical education, and there are still different definitions. While many studies measure confidence, the term is often used interchangeably with "competence", or as a measure of self-assessed competence (Elizabeth and Hughes, 1986; Epstein and Hundert, 2002; Stewart *et al*., 2000). Learners themselves have difficulty distinguishing between confidence and competence. One qualitative study defined "confidence" as a way learners use to describe what they are able to do (Stewart *et al*., 2000), but used "lack of confidence" to describe a situation which made them anxious and uncertain they were correct, rather than self-reported incompetence (Roland *et al*., 2015; Stewart *et al*., 2000). Confidence can increase with competence, but can also decrease with increasing competence (Dehmer *et al*., 2013; Leopold *et al*., 2005). Learners' definitions of competence can differ to researchers' definitions, so it is challenging interpreting literature findings. The concept of confidence is different to self-efficacy, although these are also used interchangeably by some researchers. Self-efficacy refers to having the confidence to carry out the actions necessary to accomplish a desired goal. However, confidence refers to strength of self-belief, but does not specify the task or goal that belief refers to (Bandura and Wessels, 1997; Klassen and Klassen, 2018).

Eva *et al* (Eva *et al*., 2012b) conducted a qualitative study of 134 participants (undergraduate, postgraduate, medical specialties and midwifery) across 5 countries. The authors conducted 2-3 focus groups per programme and maintained methodological rigour through methods such as face to face meetings to discuss analysis and reduce the impact of authors' own biases on interpretation. In this study, participants referred to "confidence" in their abilities having an impact on their desire for feedback and motivation to seek feedback. Participants often wanted feedback as reassurance, to

increase confidence rather than to improve performance. However, they needed to achieve a particular level of comfort, experience and confidence before they felt comfortable asking for feedback. So confidence can promote or inhibit feedback seeking.

While this study had a significant number of participants across different groups of professionals and countries, it is unclear where participants referred to passively receiving feedback and which findings apply to feedback seeking. Although participants assessed their abilities based on how often they performed a task, without reference to what they actually learnt from their experience of performing the task, some were aware that confidence in their abilities did not necessarily mean they were competent. Eva's earlier research (Eva, 2009) explored this further, concluding that we assess ourselves as proficient at a skill when the rate at which we are learning from additional experiences declines, rather than based on the actual level of performance achieved.

4.6   Summary of individual factors

I have summarised the key individual factors influencing feedback seeking behaviour described by the literature below.

Table 6 Summary of individual factors influencing feedback seeking behaviour

Factor	Summary
Age and Experience	Small number of rigorously conducted qualitative studies in medical education conclude feedback seeking behaviour develops as UG and PG learners progress. Nothing in the literature explaining how or why this is the case. However, organisational literature concludes feedback seeking behaviour reduces as participants integrate better.
Benefit v cost	Learners weigh benefit with cost. More likely to seek feedback if low perceived costs. This affects whether they use inquiry or monitoring to seek feedback. GO can impact in how they perceive these costs and benefits. Very few detailed studies in medical education exploring what exactly those costs are, how they impair feedback seeking and how the can be overcome.
Self-assessment	Only two quality medical education studies, one included UG students. Self-assessment can also be a barrier to how the learners use feedback if the feedback does not match their own self-assessment. Desire for feedback conflicts with fear of learning they are underperforming, making it difficult to seek, hear, accept, reflect on and utilise feedback. Feedback seeking can

	develop self-awareness by uncovering information unknown to self but known to others, known as the "blind spot".
Self-esteem	Very few papers in medical education. One paper on Dutch UG Vet students and one on Taiwanese PG learners. Less likely to seek feedback if perceived cost to self-esteem. See also GO section.
Image	Very little in medical education. Learners need to balance benefits of seeking feedback with losing face and appearing vulnerable with supervisors or peers.
SRL	Very little in medical education. Self-reported improvement in UG learners (qualitative study) through clarifying role, promoting learning opportunities and reflection. More experienced learners can proactively use others to self-regulate their learning.
Self-motives	Explored in organisations. One (qualitative) study in postgraduate medical education, which found that trainees who have a positive relationship with senior clinicians will seek feedback from them for self-assessment or self-improvement. They seek feedback using WPBA for self-enhancement and self-verification, or without WPBA for self-improvement and self-assessment.
Self-determination	Very little quality research in medical education, so unable to draw any conclusions.
Goal orientation	Research is in PG trainees and is quantitative. Concludes that LGO influences feedback seeking to improve learning while PGO influences FBS to demonstrate performance and highlight success. Less likely to seek feedback if PGO if perceive high cost of feedback. No research in medical education exploring why or how these are related.
Confidence	Different meanings by researchers and learners, and different meanings within the learning community. One large multi-centre qualitative study including UG and PG learners- concluded learners seek feedback to increase confidence or reassurance.

4.7   Context

4.7.1   Workplace culture

Having discussed evidence for intrinsic factors which influence feedback seeking behaviour, I will now consider extrinsic influences.

The culture of a workplace refers to the identity of people working in the organisation, how the organisation is perceived by others and the organisation's visible behaviour, which is a balance between the values of the organisation and its practical needs (Schein, 2010). Workplace culture is different from learning culture, which describes the shared attitudes, beliefs, practices and values that underpin how an institution designs education of its learners (Watling *et al*., 2013a; Watling, 2015).

Culture can affect learners' decisions to seek feedback. Learners are more likely to seek feedback if they perceive they are in a safe, supportive learning environment. A workplace culture where supervisors are approachable and friendly and are clear about expectations and goals and will enhance feedback seeking, reduce perceived costs and increase perceived values (Milan *et al*., 2011; Teunissen *et al*., 2009c; VandeWalle *et al*., 2000a). However, in one qualitative American study, postgraduate trainees felt a culture of "politeness" impacted negatively on feedback-seeking by reducing the honest, constructive feedback learners received (Ramani *et al*., 2018a).

Other literature also suggests that creating a workplace where individuals feel safe to speak up and view feedback seeking as normal in that workplace encourages FBS behaviour by reducing the perceived costs of loss of face associated with seeking feedback (Williams *et al*., 1999).

4.7.2   Public versus private setting

Individuals may be less likely to seek feedback in public, especially if they expect negative feedback, and may experience nervousness and anxiety about creating a negative impression in these situations (Northcraft and Ashford, 1990b). Feedback seeking through the inquiry method is a much more public way of seeking feedback than monitoring, so use of this will decline if the feedback has the potential to be negative (Ashford, 2003; Crommelinck and Anseel, 2013c).

4.7.3   Risk to patient safety

There are no studies on the relationship between customer satisfaction and feedback seeking behaviour and there has been one study in medical education on risk to patient safety influencing FBS. Learners' concerns about patient safety positively influences feedback seeking and who the learner

selects as a feedback giver. Ravik (Ravik *et al*., 2017b) observed nine nursing students performing cannulation on a latex arm and on each other's arms, collecting data using video observations. Nursing students were more likely to seek feedback from peers when performing the skill on a latex arm, but asked for feedback from their teacher and more frequently when practising the skill on each other. The authors concluded this was related to patient safety concerns and the fact that this was a painful and technically difficult procedure.

4.8   Target of feedback-seeking attempts

4.8.1   Relationship between feedback-seeker and feedback giver

The relationship between the feedback-seeker and feedback-giver has been explored in some medical education studies. Several have found a positive relationship between the feedback-seeker and the feedback-giver encourages feedback seeking (Bok *et al*., 2013; Bowen *et al*., 2017b; Pelgrim *et al*., 2014), while a negative relationship inhibits it (Gratrix and Barrett, 2017). Bowen (2017b) concluded that tutor approachability accounted for some of the variations in feedback seeking they observed between placements. In this study, the learners' relationship with their supervisors also impacted on their decision to select a feedback-giver. Learners reported that they were less likely to seek feedback and engage with feedback received if they felt devalued, but engaged more with feedback received when they perceived supervisors put more effort into their relationship with the student (Bowen *et al*., 2017b).

Gratrix *et al* (2017) performed a qualitative exploration of feedback-seeking by nursing students and also found that the relationship between student and mentor was a significant influence on seeking and engaging with feedback, describing the importance of developing trust and promoting confidence to seek support from their supervisor. Some participants study described unsuccessful attempts at approaching a tutor and the negative effects this had on feedback seeking, describing receiving "*aggressive*" responses back, which made them "*frightened*" to approach them again. In these circumstances, many students then sought feedback from another tutor they had already developed a relationship with.

Research in business organisations and psychology (Ilgen *et al*., 1979; Steelman *et al*., 2004) described the importance of credibility when an individual decides to seek feedback, as they perceive the feedback is likely to be more valuable. They are therefore more likely to seek feedback if they can seek feedback from a credible source (Fedor *et al*., 1992; Levy *et al*., 2002; Vancouver and Morrison, 1995).

Furthermore, a good relationship with the feedback-giver can result in less chance of a negative reaction from the feedback-giver, and the learner may be more likely to receive constructive feedback as a result. So a good relationship reduces the perceived cost of feedback seeking and is more likely to lead to valuable feedback (Levy *et al*., 2002; Vancouver and Morrison, 1995; VandeWalle *et al*., 2000b).

4.9   Predicted feedback sign

The feedback sign, in other words whether the feedback received is positive or constructive, influences the perceived cost and value of seeking feedback. Receiving constructive feedback implies that the receiver needs to improve performance and further feedback is likely to be needed after more practice to aid improvement, so the feedback may be perceived more useful. Receiving positive feedback may make further feedback on the same tasks less valuable to the receiver. However, if an individual feels they have not performed a task well, they may be less likely to seek feedback, fearing the subsequent impact to their self-esteem from negative feedback. However, if they perceive they performed a task well, they may be more likely to seek feedback to enhance self-esteem (Anseel *et al*., 2015; Kinicki *et al*., 2004).

4.10 Summary of contextual, feedback-giver and feedback factors

Table 7: Summary of contextual, feedback-giver and feedback factors influencing feedback seeking behaviour

Factor	Summary
Workplace culture	Rigorous evidence in medical education indicating learners are encouraged to seek feedback in a supportive, safe learning environment where they feel safe to speak up. In PG American trainees - A culture of "politeness" impacts on honesty of feedback and is a barrier
Public v private setting	Research in organisations conclude less likely to seek feedback if in public, especially if expect negative feedback or want to create a good impression. No studies found in medical education to support this.
Risk to patient safety	More likely to seek feedback if perceive risk to patient safety- only one study in nursing education, no sufficient quality studies in medical students or doctors.
Feedback-giver	Studies in medical education. Positive relationships with feedback-giver and friendly and approachable tutors encourage feedback seeking. Less likely to seek feedback if feel devalued.
Predicted feedback sign and diagnosticity	Lack of honest and constructive feedback due to a "polite" culture inhibits feedback seeking in PG trainees in America. Very little else in medical education on how predicted value of feedback sought impacts on feedback seeking behaviour. Research in organisations suggests poor performance reduces feedback seeking as learner does not want to risk getting negative feedback, and may be more likely to seek feedback if performed a task well to enhance self-esteem.

4.11 What can an organisation do to promote feedback-seeking?

So far, this section and tables 6 and 7 have highlighted that while there have been numerous studies exploring the influences on feedback seeking behaviour in organisations, the influences of feedback seeking behaviour in medical education are poorly understood. Some of these factors have been

partially explored, for example there has been one study demonstrating that potential risk to patient safety promotes feedback seeking behaviour but only in nursing education and there are no other high-quality studies to support this (figure 7).
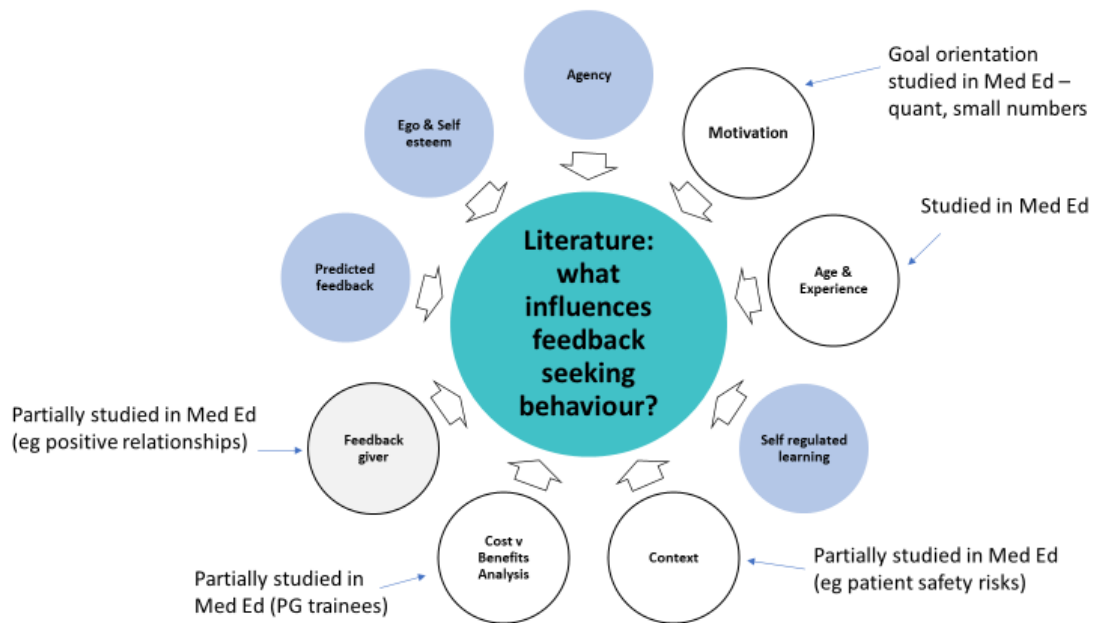
Figure 5 What do we know about the influences of feedback-seeking behaviour from the literature. Factors in blue have no published quality studies in medical education.

What is also apparent from the literature, as demonstrated in the appendix, is that there is no high-quality evidence to support the impact of any intervention on enabling feedback seeking behaviour. There are a number of interventions explored in the literature, but many of these are of insufficient quality, for example have poor uptake or response rates, to draw conclusions.

Many studies use a WPBA tool as a measure of feedback seeking behaviour. However, in reality WPBA can be requested by the trainer as well as the learner, or may even be a mutual decision, which none of these studies have taken into account. De Jong (2017) used WPBA as a measure of motivation to seek feedback by counting the number of WPBA completed, but did not account for significant number of other factors motivating completion of WPBA, such as learners needed a mandatory number to progress. Although WPBA are a common component of most education programmes, no studies have described if WPBAs increase feedback seeking behaviour.

Summary

This chapter, along with its corresponding appendix, describes the rationale for a literature review for this research project, how this literature review was conducted, inclusion and exclusion criteria and

the quality of literature. Most of this literature review draws from research in organisational psychology with some from education. This chapter also highlights the paucity of literature on the influences of feedback seeking behaviour in medical education.

5. Aims of this thesis

5.1 Thesis so far

Feedback improves learning and performance

↓

Learners (including students at EMS) feel they do not get enough feedback

↓

There are a number of challenges with receiving and giving effective feedback

↓

Feedback-seeking can help overcome these feedback challenges

↓

Despite this, students do not often seek feedback, with junior students seeking less feedback than senior students

↓

Overall Research Question: How can we promote development of feedback-seeking behaviour?

↓

The influences of FBSB in medical education are poorly understood

↓

There are few high quality studies supporting any interventions having an impact on FBSB

5.2 Other influences in developing these aims

This project reflects the priorities of my funding institution, EMS. As discussed earlier, improving feedback was one of the top priorities of the UoE, and specifically EMS. Prior to my fellowship starting, some internal work had been conducted to explore this further in the context of feedback on Objective

Structured Clinical Examinations. The School also wished to improve feedback during clinical attachments and change WPBAs from summative to formative. As I was in full time employment at EMS, my research aims needed to align with the priorities of EMS. As already outlined, whether a WPBA supports feedback seeking behaviour is poorly understood. The second strand of this project (figure 7) therefore describes how I designed, developed and implemented a feedback tool for students to use to seek feedback during clinical attachments. The third strand explores whether this formative tool helps overcome the barriers described in the first strand, to promote students' feedback seeking behaviour.

While this thesis is laid out in three consecutive strands for more logical reading, as I only had two years to design and conduct this project, in reality all three strands were conducted simultaneously; I explored (1) why students seek feedback, the promoters and barriers at the same time as (2) piloting and evaluating the feedback tool and (3) exploring its impact on feedback-seeking. This had a number of advantages as well as limitations, which I shall discuss in the discussion section of this thesis.

5.3   Overarching aims

Therefore, the overarching aim of this thesis is to develop an understanding of the influences of feedback seeking behaviour in undergraduate medical education and how we can promote it.

The individual aims are:

1. To explore what motivates learners to seek feedback in the clinical environment and explore the barriers that inhibit feedback-seeking behaviour
2. To explore if a formative WPBA tool can help learners overcome the barriers to feedback-seeking described in the first aim.

Figure 6 Aims of this thesis

Section 3

6. Methodology

6.1   Introduction

Outline of thesis so far

Section 1

Feedback improves learning and performance

Learners (including students at EMS) feel they do not get enough feedback

There are a number of challenges with receiving and giving effective feedback

Feedback-seeking can help overcome these feedback challenges

Despite this, students do not often seek feedback, with junior students seeking less feedback than senior students

Overall Research Question:

How can we promote development of feedback-seeking behaviour?

Section 2

The influences of FBSB in medical education are poorly understood

There are few high quality studies supporting any interventions having an impact on FBSB

Aim: To develop an understanding of the influences of feedback-seeking in undergraduate medical education and how we can promote it.

1.1. To explore what motivates learners to seek feedback in the clinical environment and explore the barriers that inhibit feedback-seeking behaviour

2.2. To explore if a formative WPBA tool can help learners overcome the barriers to feedback-seeking described in the first aim.
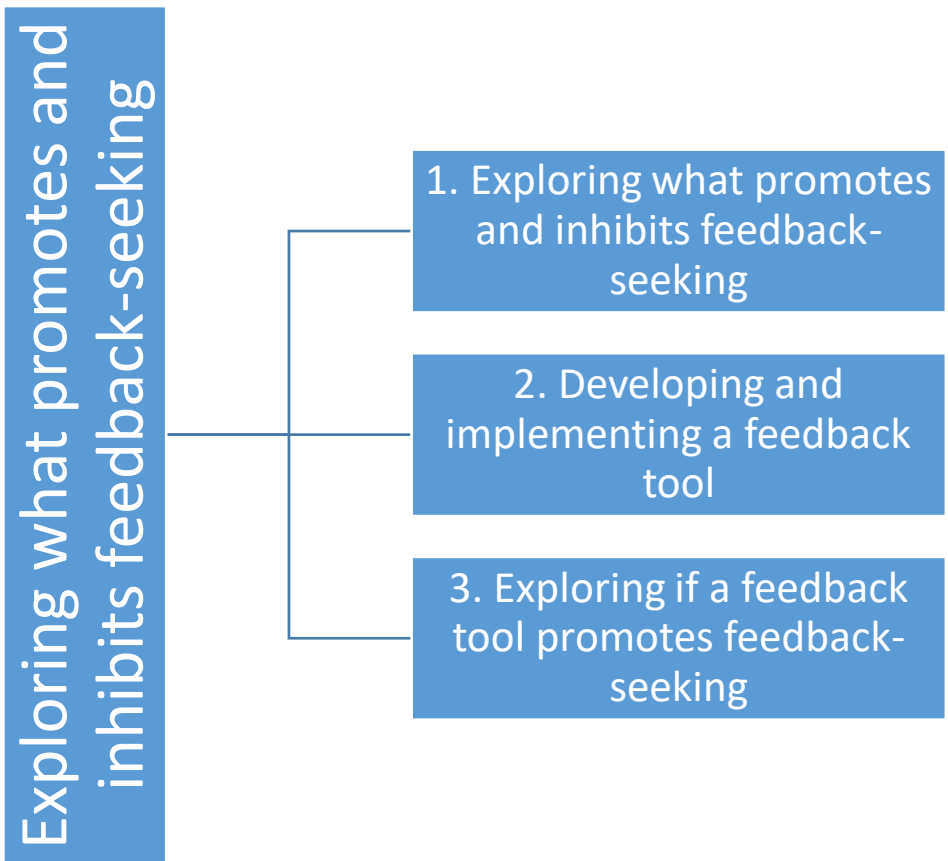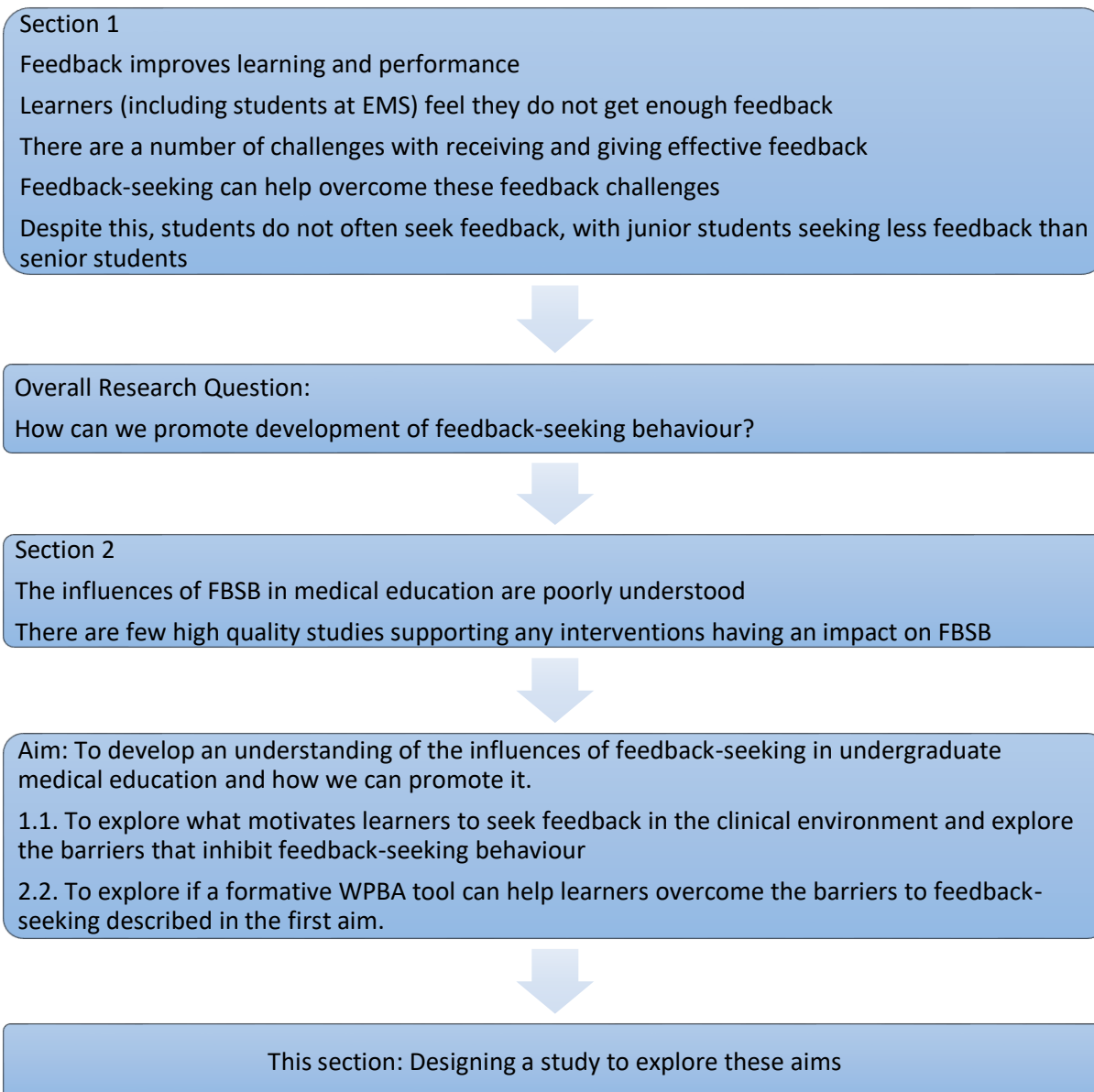
This section: Designing a study to explore these aims

This chapter describes the justification for the methodology and methods used in this thesis.

6.2 Justification and theoretical basis for methodology and methods used

6.2.1 Value of qualitative research

Qualitative research aims to make sense of the world and interpret phenomena through the meanings people bring to them (Denzin and Lincoln, 1994), focussing on the what, why and how (Creswell, 1998), which complements the "what" and "how many" questions that quantitative researchers consider. Qualitative research explores and helps understand the experiences people go through and the meanings they make of them, using words or images rather than numbers. Quantitative methods enable us to develop a broad understanding of an experience, but qualitative methods enable deeper exploration of more complex and multifaceted concepts (Morrow, 2007). Qualitative research hypotheses are generated from analysis of the data rather than stated before data collection starts (Silverman, 2011).

6.2.2 Research paradigms

To justify my methodology and methods used, I first will discuss the theoretical perspectives underpinning my research, which describes:

> "the philosophical stances that lie behind the research methodology. They are the starting point from which assumptions about the research are based and they influence how the study is conducted, the researcher's role and the type of knowledge that is produced." (Illing, 2007).

A research paradigm is "*a loose collection of logically related assumptions, concepts, or propositions that orient thinking and research*"(Bogdan and Biklen, 1998). It is the belief system containing my ontological, epistemological and methodological assumptions (Guba, 1990) around which I have interpreted knowledge. It has therefore impacted on my choice of methodology and research design (Cohen *et al*., 1994).

Underpinning the philosophical and theoretical basis of any research are the researcher's ontological and epistemological stances.

6.2.2.1 Ontology

Ontology refers to the researcher's beliefs and assumptions about the nature of the social world, in other words what is reality. The two main ontological positions in social science are:

- **Realism**- where an external reality exists independent of our beliefs and interpretation of it.

- **Idealism**- where reality is only known through the mind and through socially constructed meanings, with no reality existing independent of this.

I have approached this research from an idealist position, making the assumption that multiple realities exist and where we can only appreciate the realities of feedback seeking, its enablers and barriers, through the minds of feedback-seekers and feedback-givers.

6.2.2.2 Epistemology

Epistemology refers to the nature of knowledge and how we can learn about reality (Blaikie, 2007; Guba, 1990; Ritchie *et al*., 2013a) and can be constrained by the researcher's ontological stance (Lincoln *et al*., 2011). The main stances are:

- **Induction**- knowledge is acquired using a bottom-up approach through observations of the world, using evidence to build theory and knowledge.
- **Deduction**- knowledge is acquired using a top-down approach by testing hypotheses against observations.

There are other epistemological stances which I will not describe in this thesis.

Research cannot be purely inductive or deductive, as we do not start with a completely blank mind (Blaikie, 2007). For the purposes of this research I used an inductive and deductive approach to acquire knowledge of how feedback seeking behaviour is influenced. As themes were generated from the data, I tested them against new and previous data collected (Morrow, 2005a; Polkinghorne, 2005). I also considered the relationship between myself and my research participants, appreciating that students and clinicians will be affected by participating in this study and their relationship with me, either as a trainee (if they are clinicians), or as a member of the medical school faculty (if they were students). I therefore had to consider that my research findings would be influenced by this relationship and tried to make my assumptions and values as transparent as possible. This is discussed in detail in the final section of this thesis.

When considering the knowledge acquired, I also considered what is "truth". While quantitative research estimates probability of truth through, for example, statistical significance, this is not possible in qualitative research. The coherence theory of truth argues that reality can only be known in a consensual way, through several reports confirming a finding

6.2.2.3 Types of Research Paradigms

A number of research paradigms exist.

- **Post positivist:** the researcher takes a critical realist stance, assuming there is one true reality. The researcher strives for objectivity (Guba and Lincoln, 1994).

- **Interpretivist-constructivist**: there are as many realities as there are participants and researchers. Participants and researchers co-construct meanings together, accepting that the researcher brings her own values into meanings. Grounded theory and phenomenology are typical methodologies used (Creswell, 1998; Guba and Lincoln, 1994).

- **Critical-ideologist:** multiple realities exist but there is a true reality related to power and oppression. Typical methodologies used include participatory action research (Kidd and Kral, 2005; Morrow, 2007).

6.2.2.4   The constructivist paradigm

Throughout this study, I have used a constructivist paradigm, using the philosophical assumption that there are multiple realities which are subjective and emerge from my interpretation between the interaction between myself, the researcher, and the participant to co-create knowledge (Watling and Lingard, 2012).

Constructivists "*generate or inductively develop a theory or pattern of meanings*" (Creswell, 2003) throughout the research process, and is therefore best suited to using qualitative methodology to explore these multiple realities. The choice of methodology, in other words how we gain knowledge, emerges from the ontological and epistemological stances of the researcher (Guba and Lincoln, 1994). As I wished to develop a theoretical framework of new knowledge (Kennedy and Lingard, 2006), rather than testing existing theory, I have used grounded theory methodology.

I did not use other qualitative methodologies such as phenomenology or ethnography as I wished to take a practical approach to develop solutions to problems, not just explore experiences of problems. Phenomenology explores the meaning people attach to a particular phenomenon, concept or idea and helps us to gain an insight into people's experiences from their perspective. Ethnography helps us to understand cultures, shared beliefs, behaviours and values of groups of people and usually involves observing the participants for prolonged periods of time by the researcher immersing themselves in the social group (Ritchie *et al*., 2013). Grounded theory fitted in best with my overall research aim to promote development of feedback-seeking, and with the need of my employing organisation to improve feedback in the medical school.

Grounded theory seeks to explore and understand social and psychological processes "*to explicate what is going on or what is happening… within a setting or around a particular event*"(Morse *et al*., 2009). This therefore fit well with my desire to explore feedback-seeking behaviour in the clinical workplace.

I chose to use constructivist GT over post-positivist GT because post-positivist GT considers there to be one reality, unlike constructivist GT where there are multiple social realities. I wanted to explore feedback-seeking through the eyes of students and teaching staff. All of their experiences needed to be considered valid and real. I was aware that as there would likely be many different circumstances affecting feedback-seeking, different students would be motivated to seek feedback in different ways.

6.3 Grounded Theory

6.3.1 Types of Grounded Theory

There are four main schools of grounded theory (GT);

- "Traditional" Glaserian (B. Glaser and Strauss, 1967)

- "Situational analysis" Clarkeian (Clarke, 2003)

- "Constructivist" Charmazian GT (Charmaz, 2006)

- Straussian GT (Strauss, 1987)

Glaserian and Straussian GT stemmed from a positivist and post-positivist paradigm, considering there to be one true reality and the researcher is detached and objective (Guba and Lincoln, 2005). It aimed to seek explanations or predictions from the dataset, rather than from the researcher's prior theoretical viewpoint (Glaser and Strauss, 1967). This type of GT refers to knowledge lying in the data and waiting to be "discovered" by the researcher (Watling and Lingard, 2012). In reality, however, it is difficult to conduct research without having an awareness of what is already known on the subject, in order to design a research proposal and apply for ethics approval (Barbour, 2001). I also felt it was important to acknowledge and appreciate my own "background knowledge, experiences and theoretical leanings" (Watling and Lingard, 2012). Charmazian GT acknowledges that analysing data involves the researcher actively interpreting it to generate themes, they do not passively emerge (Varpio *et al.*, 2017). To me, this was a far more realistic approach than Glaserian and Straussian GT.

Furthermore, while the Glaserian approach considers "why" questions, the Charmazian approach also attends to the "what" and "how" questions (Charmaz, 2008). As I wished to explore the "what" and "how" enablers and barriers affected feedback seeking behaviour as well as why, Charmazian GT was the most appropriate choice.

While Glaserian GT recommends that the literature review should not be performed until the final stages of data analysis (Glaser, 1992), Charmazian GT (Charmaz, 2014a) acknowledges that it is difficult to avoid approaching a research question without acknowledging and reflecting on the influences of prior relevant work on their analytical perspective (Apramian *et al.*, 2016). As there is

debate amongst grounded theorists about whether to conduct a literature review before or after theory generation, I will now discuss this is in more detail.

6.3.2 The role of a literature review in grounded theory methodology

Glaser, Strauss and Corbin (Glaser and Strauss, 1967; Glaser, 1992; Strauss and Corbin, 1998) advise against conducting a literature review before performing a grounded theory study as they consider it will "contaminate" the researcher (B. Glaser and Strauss, 1967) with preconceived ideas, preventing new theory from being grounded in the data collected. Strauss later conceded that a literature review may not necessarily hinder the emergence of new theory (Strauss and Corbin, 1990) and advised engaging with it throughout the research to aid the researcher in identifying what is important in the developing theory (Hickey, 1997) , so long as the researcher does not allow it to impose on the theory itself.

However, Charmaz (Charmaz, 2014b) acknowledges the importance of the literature review to allow researchers to set the stage for new research and to "*situate your work within the body of related literature*"(Bryant and Charmaz, 2007).

I sided with the Charmazian stance and elected to conduct a literature review while drafting the design of the study. This enabled me to establish an overview of current knowledge in my area of interest, where there were unknown areas and so where new knowledge could be generated. I evaluated other high-quality research and considered their methodologies and study designs to guide the design of my research (appendix). I used this to develop a research proposal, which included a short summary of the literature review, which was required for the ethics committee, for my MD proposal and for my grant application. I also did not wish to repeat previous studies (Chiovitti and Piran, 2003) but built on their methodologies, methods and findings.

In summary, a literature review conducted before starting a Charmazian grounded theory study can guide research aims and design of the study, establish theoretical underpinnings to guide the study and establish where new findings will sit amidst current knowledge.

7. Methods

7.1 Introduction

The previous chapter outlined my research paradigm, epistemological and ontological stances. I also discussed my rationale for using Charmazian GT methodology to explore my aims.

> **Section 1**
>
> Feedback improves learning and performance
>
> Learners (including students at EMS) feel they do not get enough feedback
>
> There are a number of challenges with receiving and giving effective feedback
>
> Feedback-seeking can help overcome these feedback challenges
>
> Despite this, students do not often seek feedback, with junior students seeking less feedback than senior students

⬇

> **Overall Research Question:**
>
> How can we promote development of feedback-seeking behaviour?

⬇

> **Section 2**
>
> The influences of FBSB in medical education are poorly understood
>
> There are few high quality studies supporting any interventions having an impact on FBSB

⬇

> Aim: To develop an understanding of the influences of feedback-seeking in undergraduate medical education and how we can promote it.
>
> 1.- To explore what motivates learners to seek feedback in the clinical environment and explore the barriers that inhibit feedback-seeking behaviour
>
> 2.- To explore if a formative WPBA tool can help learners overcome the barriers to feedback-seeking described in the first aim.

⬇

> **This section: Designing a study to explore these aims using Charmazian Grounded Theory**

My choice of methodology influenced how I collected my data, as did:

- The information I wished to collect

- The population I wished to target (UG medical students and clinical teachers at EMS) and how accessible they were

- Whether I wished to collect data from whole populations or a sample

- Time: I had two years to design and complete this project

- Cost resources: I was funded by NHS Education Scotland through EMS

- My intended audience (other medical educationalists)

- My position as a senior trainee on a fellowship in the medical school (Ritchie *et al*., 2013a)

These factors account for the differences in qualitative research design, methods and approaches. I used a combination of questionnaires and interviews (appendix).

7.2 Questionnaires

7.2.1 Why I used questionnaires

Charmaz (Charmaz, 2006) recommends anonymous data collection methods, such as open-ended questionnaires, to encourage frank disclosures that participants may not wish to make to the researcher unless they could remain anonymous, such as personal feelings and failures. Given that I could be perceived in a position of power as I was a clinician and continued to have teaching responsibilities, I felt anonymous questionnaires could allow students to discuss their experiences without fear of consequences. Open-ended questionnaires allowed them to write as much or little about their experiences as they wish. Charmaz considers this a suitable data collection method if researchers are unable to collect data from interviews or focus groups and other GT theory studies used questionnaires to investigate opinions or attitudes of large populations (Thwaites Bee and Murdoch-Eaton, 2016). I did not wish to use focus groups or interviews alone because I would risk only capturing views of people who volunteered to participate, without knowing if they were majority views. Furthermore, as my study progressed, I realised the majority of my interview participants were from Year 5 and only one Year 3 student volunteered to be interviewed. Hence, I needed additional data collection methods to capture this population. The disadvantage of open-ended questionnaires, of course, is that questions cannot be modified or reworded once they have been asked, they do not encourage the same intimacy as an interview does and the researcher can't follow up on responses or explore them in more detail (Charmaz, 2014b).

7.2.2 Designing my questionnaires

How useful a questionnaire is in collecting the desired information depends on the wording, use of open or closed questions, length (Cook *et al*., 2000) and format. I mostly used open questions to collect rich data. I did use a very small number of closed questions with quantitative responses to keep the questionnaire short, so students would be more likely to complete it (Cook *et al*., 2000; Edwards *et al*., 2002). I used several questionnaires throughout the project to explore themes raised in previous questionnaires and interviews I had already conducted. While some of the student questionnaires

were long, I balanced this against the decision to send out more frequent but shorter questionnaires to obtain the same information, which can also reduce response rate (Cunningham *et al.*, 2015). Questionnaires were reviewed by my supervisors (HSC, DH) and the final versions trialled on a postgraduate student outside the research team, to ensure they took an acceptable time to complete, collected valid and reliable responses and weren't misinterpreted (Couper, 2000; Thwaites Bee and Murdoch-Eaton, 2016).

7.2.3   Questionnaire distribution

I aimed to sample whole student year groups, so I delivered student questionnaires on the virtual learning environment (VLE), which already delivered teaching evaluations. I used reminders (Fan and Yan, 2010) to optimise response rate. Most student questionnaires had a good response rate, but I considered response bias (McFarlane *et al.*, 2007) during analysis. I was unable to sample whole populations of clinicians and General Practitioners as I did not have access to all contact details, so site module leads (SML) disseminated online links to the Survey Monkey questionnaire by email.

While selection should ideally be random to reduce bias, the GP module lead specifically selected GPs who had already voiced a mixture of positive and very negative opinions to him and were willing to speak to me. This was useful to help explore their opinions and experiences in more detail, and I hoped to capture richer data by exploring extremes of opinion.

7.2.4   Factors affecting response rates

Online surveys have a low delivery cost, fast delivery time and offer greater anonymity (Fan and Yan, 2010), but not everyone had internet access, such as students on peripheral attachments with poor WiFi, or clinicians in trusts which blocked the survey with NHS firewalls and spamming filters. Clinician questionnaires had significantly lower response rates, which other researchers have experienced (Tambor *et al.*, 1993). This could be because of lack of time or engagement (Cook *et al.*, 2000; Cunningham *et al.*, 2015; Thorpe *et al.*, 2008). I avoided distributing questionnaires around students' exam times, which was one of the stipulations by the Ethics Committee, but this meant that some questionnaires overlapped with holidays so would have had a poorer response rate, so I kept them open for up to 6 weeks.

7.3   Single and Group Interviews

7.3.1   Use of interviews

I used interviews to explore data from previous interviews and questionnaires in more detail (Morgan 1993).

I hoped to use focus groups, which generate data through interaction between research participants (Kitzinger, 1995, 1994), but I was unable to get more than 2 or 3 participants to be available at the same time as focus groups need 6-12 participants (Onwuegbuzie *et al*., 2009). However, I still used the structure recommended for facilitating focus groups, such as encouraging group interaction to promote participants to (Kitzinger, 1994), generate their own questions and pursue their own priorities. I also gathered many anecdotes and jokes which revealed or clarified new understanding, which is another benefit of focus groups (Kitzinger, 1995)*.

Interviews do have some advantages over focus groups, for example some participants may prefer the confidentiality and anonymity offered by one-to-one interviews, or may be more engaged in interviews if their opinions deviate from the opinions of the rest of the group (Kitzinger, 1995)*. However, some students may feel intimidated by being interviewed on their own by me, but may engage with discussions with other students on more sensitive issues or issues which may deviate away from what they assumed my views were (Kitzinger, 1995).

7.3.2   Sampling strategies

In GT, sampling should reflect the diversity of the population (Kuzel, 1992) rather than being statistically representative (Mays and Pope, 1995)*. Different sampling strategies can be used at different stages or parts of the study (Strauss and Corbin, 1997). I used a combination of convenience, theoretical and purposive sampling.

Convenience sampling*:* Selected on availability (Patton, 2002). Initially I recruited all students who volunteered to participate and were available (i.e. did not have exams). Students were recruited through adverts on their VLE discussion board or approached me directly to participate. I then used the next two methods.

Theoretical sampling: not selected prior to starting a study, but selected later on the basis of what they could contribute to confirm, challenge, explore and develop new theoretical knowledge (Glaser and Strauss, 1967; Kennedy and Lingard, 2006). For example, I targeted GPs and nurses to explore themes which arose from previous interviews and questionnaires and tried to recruit students from years 3 and 4.

Purposive sampling: selected "for a purpose" to represent key characteristics in the population and maintain diversity of the sample, which improves precision and rigour Ritchie (Ritchie *et al*., 2013a). For example, I targeted "outliers" such as postgraduate and international students, by encouraging participants to ask if any postgraduate or international students they knew would be interested in participating, to explore as many diverse views as possible (Barbour and Barbour, 2003)*.

After every questionnaire or interview, data were analysed. Data collection and sampling continued until data was saturated, which is when collection and analysis of new data did not produce any new themes or insights into the knowledge already created (Charmaz, 2008).

7.3.3 Total participants

17 students volunteered for interviews and I interviewed 13 students. One student cancelled and could not be contacted to arrange a further date, 2 did not attend and one only agreed to participate if I supervised him for a project. I did not interview this student due to the conflict of interest this could create.

11 clinicians participated in interviews, of which there were four GPs, four hospital consultants, two nurses and one junior doctor. The characteristics of participants are outlined in the appendix.

As a result, there were 18 single and group interviews conducted on 13 students, 9 doctors and 2 nurses. For group interviews, students were only interviewed with other students in their year and not with clinicians, to encourage them to speak as freely as they could in front of me without concerns about repercussions of discussing any negative behaviours in front of clinicians who may have taught them in the past. (I have reflected on my position as a researcher and students' perception of me as faculty in my discussion).

Out of the student interviews, 4 were single interviews, 4 were interviews with 2 participants and 1 was an interview with 3 participants.

Out of the clinician interviews, 1 was an interview with two participants and the rest were single interviews.

Appendix 10 is a summary of the interviews conducted, including the date conducted, their pseudonyms, year of study if a student and grade if a clinician.

Appendix 11 gives more details on the characteristics of each participant, including gender and whether they are an overseas or postgraduate student.

7.3.4 Conducting interviews

7.3.4.1 Developing semi-structured interview questions

I designed clearly formulated questions (Freeman, 2006) (Stewart & Shamdasani 1990) around my research aims. The initial questions were reviewed in supervision meetings to consider if they obtained sufficiently rich data. An opening question was used as an ice-breaker and the final question

asked if there was anything else the participant wished to add (Krueger and Casey, 2000). I trialled these questions with a senior researcher not in my team and a postgraduate student to check usability, phrasing and timing. After every interview and questionnaire, data were analysed, which influenced alterations of questions for subsequent interviews.

7.3.4.2   During the interviews

Participants were emailed an information leaflet and a consent form (appendix) two days before the meeting. I aimed to create a safe environment where participants felt comfortable, respected and valued without being judged (Krueger and Casey, 2000; Krueger Richard and Anne, 1994) by opening with "ground rules". I also reassured them that the content of the interview would remain anonymous and would not influence their assessment grades.

I encouraged participants to ask each other questions, query each other's statements and exchange anecdotes. I asked questions where necessary to direct the interaction or clarify the discussion and ensuring all participants contributed fully (Freeman, 2006). Interviews were audio-recorded but I also wrote field notes, for example to comment on body language and interaction between the participants, which would not be captured by the audio-recording, or memos about my ideas (Charmaz, 2014b). Charmaz cautions new researchers on ignoring cues and events and this is certainly something I improved on during my collection and analysis, although I initially found it tricky facilitating an interview simultaneously. Interviews lasted between 1 and 2 hours (Shamdasani *et al*., 1990) and recordings were transcribed for analysis.

To maintain rigour, DH sat in on one group interview, listened to two interviews and read transcripts of all interviews and focus groups. During supervision meetings, we discussed alternative phrasing of questions, interpretation and themes arising, including which to explore further.

7.3.4.3   Pseudonyms

While many qualitative publications use letters or numbers for participants, I felt strongly that I wanted the reader to appreciate these were people. I therefore asked students to select their own pseudonym at the start of each interview and have used these throughout the thesis. Clinicians chose to use their own names during interviews but later I asked the majority of them to select their own pseudonym. While pseudonyms should ideally fit with the culture and gender of the participant, it is also important to respect participants' autonomy, so I have kept their chosen pseudonyms but the appendix indicates which students are from overseas.

7.4   Other data collection methods

Section 5 describes developing the Feedback Postcards (FP), a formative WPBA tool, to explore its impact on feedback seeking behaviour to address aim 2. For the first 6 months of the pilot study, a project FP was distributed with each student FP for clinicians to provide written feedback on the project or suggest changes. These were stopped after 6 months when we reached theoretical saturation, it ceased to be cost-effective and clinicians complained about too much paperwork. Instead, they were offered the option of emailing comments instead. We did not receive any emailed comments.

Data were also collected from minutes of module and year meetings and comments posted on the VLE discussion board. Many students and a small handful of clinicians emailed comments to me directly. These sources were used to evaluate the FPs and are discussed in sections 5 and 6.

7.5   Summary of data collection methods

Table 8: Summary of data collection methods

Data source	Students or staff	Aims
Questionnaires	Both	1 and 2
Semi-structured interviews	14 students and 11 staff	1 and 2
Minutes from module and year meetings	Staff	2
Online VLE boards	Students	2
Emails	Both	2
Written feedback on project FPs	Staff	2

Appendix 5 shows the timeline of my data collection. I have included which steps informed aim 1 (what motivates feedback seeking), the development of the FP intervention and which steps informed aim 2 (if a formative WPBA tool overcomes the FBS barriers)

Appendix 10 is a table to summarise my student and staff interviews and appendix 11 is a table to show the characteristics of each participant.

7.6   Analysis and coding

Interview data were transcribed by an independent secretarial body. I checked them for accuracy while listening to the audio-recording before uploading into NVivo for coding.

Coding refers to categorising data to help organise large amounts and identify patterns. In GT, coding helps to explain data, define further data gathering and develop theory (Charmaz, 2014a). I used an iterative process, coding and analysing data at the same time as I collected it so one could influence the other, for example I used the next data collection opportunity to explore themes I realised I had not explored fully when I reflected on and coded my previous data. I considered the six questions recommended by Berkowitz (1997):

1. What common themes emerge in responses about specific topics?
2. How do these patterns (or lack thereof) help to illuminate the broader central question(s)?
3. Are there deviations from these patterns? If so, are there any factors that might explain these deviations?
4. How are participants' environments or past experiences related to their behaviour and attitudes?
5. What interesting stories emerge from the responses? How do they help illuminate the central question(s)?
6. Do any of these patterns suggest that additional data may be needed? Do any of the central questions need to be revised?   Are the patterns that emerge similar to the findings of other studies on the same topic? If not, what might explain these discrepancies?

7.6.1   Levels of coding

I performed three levels of coding; initial, focussed and theoretical.

Initial coding

In this phase, the researcher is open to as many theoretical directions as possible (Charmaz, 2014b). I performed initial coding as soon as I obtained data, using sentence-by-sentence coding (Watling and Lingard, 2012) rather than in lines to avoid data being taken out of context, while listening to the recordings to capture participant's intonations, pauses etc. Coding in fragments helps the researcher to avoid being so immersed in the participants' views that I do not question them. I considered how participants responded to events, what meanings they had and how and why they evolved. I used gerund-based coding (Charmaz, 2014b) to avoid making conceptual leaps and to stay true to the data (Apramian *et al.*, 2016). My initial coding highlighted areas for further clarification or exploration, and therefore guided me on how to alter the interview questions and use of questionnaires (Kennedy and Lingard, 2006).

Focussed coding

In this phase I sorted the most commonly recurring or significant codes to develop them and test them against my original data to check they fit, which improves the rigour of GT (Charmaz, 2014b). These codes need to be more directed, selective and conceptual (Glaser, 1978), to determine the strength of each code and check and preconceptions and interpretations.

Theoretical coding

Theoretical coding develops links between categories (Charmaz, 2014b) to apply an analytic framework and help make analysis more coherent. This moves focussed codes into an analytical direction and helps demonstrate relationships between focussed codes to build theory. Charmaz recommends drawing on concepts from my field and categories described by Glaser (Glaser, 2005), which include Causes, Contexts, Contingencies, Consequences, Covariances and Conditions.

Worked example of my coding

The best way to describe my coding further is with a worked example.

When I wanted to gain a better understanding of students' fear of the clinical environment as a barrier to feedback seeking, I used a three step coding process consisting of initial codes, focussed codes and theoretical codes.

The quote below from the interview with Eilidh demonstrates how I developed my initial codes.

Data	Initial codes
Eilidh Y3: *it was quite scary …everyone's quite timid and you're not used to interacting with patients and having to examine in front of a whole group... what are they going to be like? Are they going you on the spot? Make you examine people?*	Feeling scared Feeling afraid of an unfamiliar environment Feeling afraid of seeing patients Feeling afraid of what they might be asked to do and not knowing

Other examples of initial codes generated included:

- Feeling scared
- Feeling afraid of an unfamiliar environment

- Feeling afraid of seeing patients
- Feeling afraid of what they might be asked to do and not knowing
- Feeling put on the spot
- Worrying they don't know the answers to clinicians' questions
- Worrying the doctor will need to prioritise patients over them
- Worrying they may inhibit patient care
- Feeling awkward asking for feedback in front of a patient
- Feeling in the way
- Feeling stupid in front of the patient

After data collection, I grouped these into focussed codes:

Focussed codes:

1. Fear of the patient
2. Fear of the ward / clinical environment (linked to 3)
3. Fear of unpredictability of hospital environment (linked to 2)

Theoretical code: Fear of feedback seeking (also includes fear of negative feedback and fear of clinicians

7.7   Maintaining methodological rigour

Coding was discussed during research supervision meetings to cross-check coding strategies (Barry *et al*., 1999) Barbour (2001) describes the benefits of these discussions in improving rigour, by providing insight into different interpretations of the data and refining coding. Codes were continually renamed and redefined to build a thematic grid (Kennedy and Lingard, 2006). I used a constant comparison process to find similarities and differences in data (Corbin and Strauss, 2008; B. Glaser and Strauss, 1967) to develop better insight into concepts generated (Watling and Lingard, 2012).

When designing this study I considered texts recommended by qualitative researchers, such as how qualitative research should be reported (O'Brien *et al*., 2014) and the common pitfalls of GT research that new researchers such as myself sometimes fall into (Kennedy and Lingard, 2006). I also considered studies designed by other researchers. For example, Murdoch-Eaton (Murdoch-Eaton and Sargeant, 2012) conducted focus groups to looks at students' perceptions of feedback, followed by questionnaires collecting quantitative and free text data to explore themes from the focus groups and ensure their findings did not only reflect the views of the minority of participants. They then conducted a final set of focus groups to look at themes from the first two data collections. I designed my research in a similar way, by collecting data through interviews with clinicians and students and triangulating this with data collected from questionnaires to whole year groups. Qualitative researchers triangulate in different ways (Varpio *et al*., 2017) so I will now discuss this in more detail.

7.7.1 Triangulation

In post-positive qualitative research, triangulation refers to using multiple methods, theories and types of data to converge upon truth and so provide rigour and enhance credibility. However, constructivist researchers use triangulation to capture richness and diversity of data, so we don't rely on one method to establish truth (Denzin, 1978; Denzin and Lincoln, 2005; Shenton, 2004). In this thesis, I triangulated data through interviews with two different sources (students and clinicians) and questionnaire data. As discussed earlier, I considered "truth" to be known through several reports confirming a finding, so themes had to be generated more than once. I used questionnaires to ensure I captured diversity, including participants who may not have volunteered for interviews. So if strong themes were generated in questionnaires but much less so, I still considered them to be reality. For example, students only briefly discussed some of the clinician barriers to completing FPs in interviews but were much more negative in questionnaires. It was only through questionnaires that I realised the full extent of the effect of cancelled teaching sessions and poor staffing levels on students' ability to seek feedback. I also considered themes which were raised less frequently in interviews but were important because they helped me develop an understanding how patterns between concepts could be understood to contribute to my theory.

I triangulated themes through different data collection methods (i.e. questionnaire responses and interviews) and through different participants (i.e. staff and students).

All the key themes discussed in my thesis arose in more than one source, although I used smaller themes which arose in only one source to help me understand larger themes and patterns. Some were more prominent in one source than another or were approached from a different angle. For example, the negative consequences of using the FPs arose far more frequently from students in questionnaires than interviews, which is understandable as questionnaires were anonymous and students knew that the same person interviewing them was also responsible for implementing the FPs. One example of this is in section 18.7 when I describe students feeling that they were not being treated like adults. This theme was not as prominent in student interviews, although one student (Lisa, Y4) referred to them as "*another hoop to jump through*". However, it arose in approximately half of the year 4 and year 5 questionnaire responses from the winter 2015 questionnaire. Some responses were extremely emotive, describing the FPs as patronising and a way of checking up on them. Considering the fact that I was a trainee, hence perceived to be in a position of power in the eyes of a student, and I was known to be the person implementing the FPs, I can understand why students may not have wished to be so emotive about this theme in interviews. It is important to note that students I interviewed were volunteers. It is possible that students who felt so hostile about the FPs did not volunteer to be interviewed and instead voiced their opinions through anonymous questionnaire responses. I

therefore triangulated this theme with staff interviews. A number of clinicians made comments or suggestions about how to implement the FPs and worried that some students would behave unprofessionally by not handing in FPs, only submit ones with positive comments or lose FPs recording negative comments.

7.7.2 Saturation

I also considered themes which reached theoretical saturation, indicating that I was not collecting any new data on that theme which could have helped me gain new understanding or insight of that theme or concept (Varpio *et al.*, 2017; Watling and Lingard, 2012). I stopped collecting data when themes relevant to my research aims were saturated and have reported on these themes in my findings. Many researchers acknowledge that you can never truly achieve redundancy, when no new findings of note are obtained, because of the uniqueness of individual experiences, so themes are considered to be theoretically saturated when new findings will not illustrate a new layer of complexity (Morrow, 2005a; Strauss, 1987). I did not aim for data saturation in other themes, such as what students do with the feedback sought, as these findings would be beyond the aims of this thesis.

Morse (2004) initially referred to the concept of data saturation as when *"the researcher has continued sampling and analysing data until no new data appear…all concepts of the theory are well developed…their linkages to other concepts are clearly described"*. However, there is disagreement about the concept of data saturation among grounded theorists, and Charmaz (2006) later describes this as the:

"point at which gathering more data about theoretical categories reveals no new properties nor yields further insights about the emerging grounded theory"

Although grounded theorists have different ideas about saturation, Charmaz and Glaser (2001) advise to be aware of prematurely stopping collecting new data when repetitive patterns of anecdotes and incidents occur, but to continue "until no new properties of the pattern emerge"(Glaser and Strauss, 1967)(cited by Charmaz, 2006).

I felt this was the most pragmatic approach, as it can be difficult to know if you have collected all possible incidents without having a much larger sample size. Collecting data on further incidents and anecdotes would not have necessarily contributed to a deeper understanding of patterns between themes generated. A number of factors can impact on ability to reach saturation which would have impacted on my ability to continue collecting data as well, such as time and money (Clarke, 2007).

During my research, I considered reaching data saturation as where no further incidents or anecdotes were contributing to my understanding of patterns and complexities. However, my main limitation

was in difficulty recruiting. For example, when I explored the impact of fear, due to difficulty recruiting into interviews, I felt I developed good understanding of feedback-seeking from clinicians but was unable to explore the impact of fear of staff who are not doctors, such as midwives and other healthcare professionals, from the point of view of the person giving feedback.

Similarly, when I considered the impact of age and experience on feedback-seeking, my data were collected from students from years 3, 4 and 5 and these were the ones who volunteered to participate. I was only able to recruit one year 3 student and no students from years 1 and 2. While I therefore used questionnaires to capture more views from students in year 3, I would not have been able to explore these themes in as much detail. My understanding of this factor is therefore considerably based on data from senior students and their memories of their junior years.

Other themes were less fully saturated. I have discussed them in my thesis because they help with understanding the factors promoting feedback-seeking. For example, I briefly explored clinicians' receptivity to feedback-seeking but this was a theme that I would have liked to explore in more detail if I had more time and wished to make my research more staff-centred, as further understanding of staff lack of receptivity would obviously help understand how to address this problem.

7.7.3 Memos

I used memos throughout, to help me analyse ideas and emerging patterns between codes. Charmaz advises that this increases level of abstraction about my ideas, captures my thoughts and helps with comparisons and connections between data, codes and concepts (Charmaz, 2014). I found that they helped break my data down to compare sections. I also found keeping reflective notes on my methodology helped with decisions about which direction to take next in my data collection. I discussed some of these reflective notes in supervision meetings to highlight when I was importing too many of my own assumptions into the data or if I was staying true to the experiences of the participants.

Example of one of my memos

James Y5:

> *It's more difficult to ask for feedback if there is something you don't think you've*
> *done well I guess… and say, the tutor looked a bit disappointed, you may not*
> *want to push it too far*

My thoughts: It is a shame that it is harder to ask for feedback when the student doesn't think he has performed well, as this is when he needs it the most to improve his performance. This was a conscientious student who talked about staying long hours on the wards to learn. What was it about asking for feedback which is likely to be negative that outweighed his desire to know how to perform the task better? Is he worried about what the tutor might say? Is he worried about disappointing the tutor? Is this related to his self-esteem or confidence? Need to understand this more in further data collection. How can we help students overcome this barrier?

I therefore explored this in further interviews with other students and with clinicians and added to my memo (below). Future interviews explored the possibility of self-esteem and confidence affecting feedback seeking behaviour (interviews with Sue and Annabel in Y5) and the impact of the clinician's reaction towards the student (interviews with Sally and Linda in Y5, interviews with Dr B_Hospital and Dr C_ Hospital). This helped me to understand the impact of fear and what contributed to that fear.

Additional memo: more students are discussing the possibility of receiving negative feedback as a barrier to asking for feedback. Some discuss emotions about the clinician, calling them frightening (Sally, Y5). Others describe emotions about the feedback itself. Interestingly, clinicians seem to be aware that students find it difficult asking for feedback when they know they haven't performed a task well, and describe this being intimidating to students.

7.8   Developing concept maps

Grounded theorists have different definitions of theory, but one useful definition is:

> *"a theory states relationships between abstract concepts and aim for either explanation or understanding"(Lapan et al., 2011)*

As part of my analysis, I wrote memos and used NVivo to develop diagrams illustrating my thoughts on which codes were connected. I focussed on my thoughts and reflections (discussed in the reflexivity section), contradictory opinions and experiences, and patterns I wished to explore further in my next interview. This helped develop new patterns between memos and codes, sort them into clusters and compare them. I created maps of how codes were related to each other, initially using paper post-it notes, then using NVivo as patterns developed, to identify the strength of the relationship and what I should explore further. As I built on these maps, I furthered my understanding of how my coding fitted together to develop concepts. Some concepts had one map created as a visual representation of my new findings. These were important concepts which were significant to help me understand my data. I then developed theoretical framework maps as visual representations of how concepts related to each other, so developing my theory. During this process, I considered the literature I had read and

how my new patterns fit with what is currently known. This helped me connect my findings with current knowledge.

Summary

In summary, I used Charmazian GT to explore the enablers and barriers of feedback seeking behaviour in undergraduate students, and how a formative WPBA tool can impact on that. I made the assumption that reality can only be known through the minds of those experiencing it and used a combination of inductive and deductive epistemological approaches when designing my project. I collected data through questionnaires to clinicians and students, and interviews with 14 students and 11 clinicians (hospital doctors, GPs and nurses) to address my research aims, combined with further data from project FPs, emails, minutes of year meetings and the VLE to evaluate the WPBA tool I developed.

This chapter has discussed how I maintained methodological rigour, including outlining my coding process, data triangulation and theory building.

I will describe my reflexivity in my discussion.

I will now discuss my results, starting with results for the first aim.

Section 4

Exploring the influences on feedback-seeking behaviour

Section 4
Exploring the Influences on feedback-seeking

Section 1

Feedback improves learning and performance

Learners (including students at EMS) feel they do not get enough feedback

There are a number of challenges with receiving and giving effective feedback

Feedback-seeking can help overcome these feedback challenges

Despite this, students do not often seek feedback, with junior students seeking less feedback than senior students

Overall Research Question:

How can we promote development of feedback-seeking behaviour?

Section 2

The influences of FBSB in medical education are poorly understood

There are few high quality studies supporting any interventions having an impact on FBSB

Aim: To develop an understanding of the influences of feedback-seeking in undergraduate medical education and how we can promote it.

1.1. To explore what motivates learners to seek feedback in the clinical environment and explore the barriers that inhibit feedback-seeking behaviour

2.2. To explore if a formative WPBA tool can help learners overcome the barriers to feedback-seeking described in the first aim.

Section 3

Charmazian Grounded Theory study using data from staff and student interviews and questionnaires and minutes of staff meetings

This section: What are the influences of FBSB (aim 1)

The previous section outlined how I explored these aims, using Charmazian GT methodology, collecting data through:

- Single and group interviews with students in years 3, 4 and 5

- Interviews with hospital clinicians, GPs and nurses

- Questionnaires distributed to students in years 3, 4 and 5, hospital clinicians and GPs

This section will address the first aim and is divided into three parts, describing the factors which promote or inhibit feedback seeking behaviour:

- Intrinsic barriers and promoters

- Extrinsic barriers and promoters

- Feedback factors

I have used quotes from my data to illustrate certain significant findings, but in the interests of word count I have limited this to up to two quotes.

8. How intrinsic factors promote or inhibit feedback-seeking

8.1 Introduction

This section will be divided into three sections, exploring how intrinsic, extrinsic (staff and context) and feedback factors affect feedback seeking behaviour. I will first start with intrinsic factors.

I have organised my findings in order of the frequency of each theme occurring and have only included themes if they occurred in more than once source (for example students and clinicians, or interviews and questionnaires) or if they aided understanding of the knowledge I was developing. For example, fear as a barrier to feedback-seeking is the first finding described in this chapter because it was the most significant. It arose in nearly every interview and questionnaire and helped me to understand subsequent themes described in this chapter, such as the impact of fear of negative past experiences (section 8.5). The least frequently occurring themes still occurred in more than one source. For example, proactivity (8.7) was discussed in several interviews and I have included quotes from 3 students and 2 clinicians. Opportunities to seek feedback (19.6) occurred less frequently in interviews but was a strong theme in questionnaire responses in more than one year group.

8.2 Fear

8.2.1 Fear of the clinical environment

Students described fear and trepidation when referring to being on the wards, using words like "*scary*" and "*awkward*", which made them reluctant to seek feedback. They especially found bedside teaching sessions and examining patients initially daunting because this was something they were not used to, especially when they had to examine patients in front of other students.

Eilidh Y3:

> *it was quite scary …everyone's quite timid and you're not used to interacting with patients and having to examine in front of a whole group... what are they going to be like? Are they going you on the spot? Make you examine people?*

The unpredictability of what to expect in teaching sessions also worried them, in particular whether they would be asked questions they did not know the answers to, or if they were going to be asked to perform an examination they felt they could not yet perform well.

Eilidh Y3:

> *It's never nice being put on the spot, like if you get a bedside teaching session and all of a sudden, they're quizzing you on some of the things you don't know*

They also struggled with the unpredictability of clinical caseloads, which inhibited feedback seeking. They did not always know what clinical conditions they were going to see or if they would be asked to perform a task, such as examination, on a patient, or if the patient would be too sick for them to do anything other than observe. They also did not know who would be observing them or if they could find anyone at all to seek feedback from.

Jim Y5:

> *with rotas and stuff, staff changing, it was difficult to have somebody to go to. I think what would work actually would be if they had a go to person on each team, you know…So that way students know that they have somebody to go and present their cases to.*

Some feared seeking feedback in front of patients, either because they felt self-conscious doing so or because they worried the patient would feel awkward or it would divert the clinician's attention away from the patient, who was only there to see the clinician, towards the student. Patients took priority over them and did not want to impact on the clinician's ability to deliver patient care.

James Y5:

> *in a busy environment such as A+E, and in a busy period, you know that you can't take away from the time the team is giving to the patients…You realise there are other things going on apart from your learning.*

8.2.2   Fear of clinicians

Medicine is a very hierarchical profession, with consultants being the most senior clinicians. A large number of students described fear of senior clinicians such as consultants and even sometimes registrars. They used words such as "*scared*", "*intense*", "*intimidating*" and "*nerve-wracking*" to describe how they felt when they had to interact with clinicians. Consultants were referred to as "*just old and miserable*" and students needed courage or being "*ballsy*" to approach them and interact with them. Most felt they lacked the "*courage*" needed to approach clinicians for feedback.

Sally Y5:

> *it is very nerve-wracking going into a new environment and god, some of the consultants are frightening!... clearly some students may be quite ballsy and just go straight in.*

One student described observing an interaction between a "*shy*" fellow student and a consultant, where the student became so uncomfortable at being forced to interact with the consultant that she cried:

Linda Y5:

> *who couldn't look directly at the doctor…she was really shy…the consultant asked her a question directly and she just stared at her feet and got so nervous and she started crying…he asked directly "what do you think" and she couldn't handle the pressure.*

8.2.2.1 Hierarchy contributed to fear of clinicians

Some students found senior clinicians intimidating purely because they were more senior and had progressed so high up in the hierarchy. Clinicians acknowledged that their seniority could be intimidating, but perceived this was part of the culture in medicine, which promoted junior doctors to look up to more senior clinicians and view them as role models. They also acknowledged that there was a power imbalance, as described in chapter 8, and senior clinicians would be giving grades for their attachment, which contributed to students' tentativeness.

Sally Y5:

> *that bridge, because you look at them, you go gosh, the hierarchical system, you've gone up so far, I'm so impressed.*

Dr A_Hospital:

> *you forget as you age how intimidating you will appear to students… yes, you're a senior person who has been here a long time, and I suspect how they perceive you is not, of course, very long distant from who you really are… they also see you as, maybe, some kind of role model and this is a judgement from on high.*

8.2.2.2 Previous negative interactions

Previous negative experiences increased students' anxiety about interacting with clinicians, describing them as being "*really grumpy*" with them and being generally negative so they felt "*everything you do is wrong*". Many had anecdotes to illustrate their own experiences, "awful" behaviours they had observed or stories about "*scary*" clinicians on attachments they heard about.

Sally Y5:

> *The consultant might come in and see me and go "who are you?" And I always say something like "oh, I'm just a student". And they go "Not JUST!!" [shouting]. And*

then walk off! And then I never see them again! And I'm like OH GOD! And then the FY1 walks into the room and they're like, "Don't worry, he's just had a bad morning"!

Steve Y5:

people who say, oh watch out for so and so, which can be totally wrong sometimes from your own perspective, but usually it can be right.

If they had experienced particularly negative feedback from one clinician, they were unlikely to seek feedback from that same clinician again because of how upset, or even ashamed, they felt in their previous experience. They couldn't bear facing feeling that upset again, so tried to avoid putting themselves in that situation.

Becky Y5:

it puts you off because you just think, I think partly it's because you feel really bad that you got bad feedback but also its that thing where you're like, just completely mortified and you don't want to be like, do you want to tell me how bad I am all over again?! So you're not going to ask that again!

8.2.2.3 Clinicians' perception of being intimidating

Students commented on how intimidating they often found senior clinicians and clinicians acknowledged this had some truth, that they could be unapproachable and abrupt. I will discuss this in more detail.

Intimidation as a tradition in medicine

While many discussed trying not to be intimidating, they also felt being viewed as intimidating was part of the culture in medicine, the way it has always been, using words such as "*traditional*". Some senior clinicians described their own experiences of feeling intimidated when they were students and were taught by clinicians they thought were "*extraordinarily good*" despite being terrifying. These were people they looked up to when they were students and aspired to be like.

Dr D_Hospital:

It's just the traditional position. The doctor, the consultant is seen as a sort of powerful person. And obviously within a medical school it becomes even more so, because there's a bit of a them and us. They're the teachers. They're the people that are giving us marks… they probably feel a bit intimidated.

Dr A_Hospital:

when I was at medical school there were certain people who I thought were terribly scary. Going and seeing the Professor of Medicine to do a history with him was incredibly terrifying. He was only trying to get the best out of you, and you came away from it feeling he would have laid bare your failings

Other clinicians attributing the perception of being intimidating to their knowledge, ability and seniority rather than their attitude towards students, using words such as "*role model*".

Dr C_Hospital:

there are just people who are very, very good at what they do, and you look up to them, and you're going to find them a little intimidating.

Stress from workload

Some reflected on whether they came across as unapproachable when stressed or busy. They reflected on this behaviour and described using a "*brusque*" attitude as their response to the stresses and pressures of work or worry about a sick patient, rather than their response to the student. Others portrayed the impression of unapproachability to help manage the demands of their job, to help them get through their day and meet deadlines. They discussed the pressures of juggling patient care, management and other NHS activities with teaching students and research.

Dr D_Hospital:

some people adopt a kind of scaly mantle… just a kind of protective shell because they've maybe got other competing demands and they just want to get through a ward round or a clinical situation and get onto whatever else it is they've got on their mind and they don't want to be bothered with people interrupting them…then something goes pear-shaped and it puts a bit of stress on the situation, and that people are going to have a short fuse sometimes…People get acutely unwell and situations become quite stressful

Intimidating because feedback is too "honest"

However, other clinicians wondered if they were viewed as intimidating because the negative feedback they delivered was too "*honest*". They felt they were delivering something the students did not want to hear and this is what made students fearful of them.

Dr C_Hospital:

You can still get an intimidating person who's very good at providing feedback, but they're really critical, you know, very honest.

Dr B_Hospital:

that might, in itself, be intimidating, in comparison to somebody who's more gentle, less honest…people are maybe just a bit brusque, you know, if they don't have much polish to the way they say things.

8.2.2.4   Students' responsibility to overcome feeling intimidated

While clinicians acknowledged that students may find them intimidating, they did not appreciate how much of a barrier this was and some felt students should be able to overcome their fear of approach them. They viewed intimidation as being the students' problem and a barrier which was not going to change, and therefore it was the students' responsibility to learn to manage it.

Dr B_Hospital:

You need to learn how to deal with intimidation...You need to learn how to deal with your response. It's not the person that's the problem, it's your response to them that's the problem, and how you manage yourself when you feel intimidated.

Dr C_Hospital:

So this idea that the student feels intimidated to ask, they shouldn't feel that way, because that's what happens...it's a matter of learning when to de-personalise a situation.

They also viewed it as the medical school's responsibility to change culture so students would be less intimidated and more likely to seek feedback.

Dr B_Hospital:

but if the structure is there to provide feedback…if the culture is, generally, for the expectation of feedback, then the intimidating person should still provide it.

Me: But we're trying to generate this culture of getting students to be more proactive in asking.

M: Yeah, well they should just do it, you know.

Me: Despite it being intimidating?

M: Yeah.

8.2.3 Fear of receiving negative feedback

8.2.3.1 Effect on confidence

Worry about receiving negative feedback also was a barrier to feedback seeking. Students worried that they might be given information which could upset them, hurt their feelings and make them feel less confident.

Sue Y5:

> they're too scared in receiving any negatives…people are really sensitive

Jim Y5:

> if I'm asking for feedback, it can be too critical, too negative, and I can take that the wrong way and it can just have a negative impact.

8.2.3.2 Negative feedback affecting professional identity

They were particularly worried about being given information which might make them question their professional identity as a student who will soon be a doctor, voicing anxiety about whether they would be a good junior doctor. The possibility of being told could not yet perform tasks that they would be expected to do after graduation was a very daunting and frightening prospect.

Annabel Y5

> some days are bad in the sense that you feel, oh my God, do I have the confidence, would I be a good junior doctor after I graduate?

Sometimes anxiety about not being able to competently perform expected tasks after graduation outweighed fear of approaching clinicians. Final year students worried they would be left alone with very little supervision after graduation, but lots of responsibility, and would be expected to perform a large number of tasks alone, with no way to seek help. This fear motivated them to try to become as competent at these tasks as possible, including through feedback seeking.

Linda Y5

> people say that when you go to your first handover as an FY1, that's really scary…so I think having practised that definitely has helped… It will be one thing off your shoulders of scary things when you're thrown into the deep end.

8.2.3.3 Concept map to show the relationship between fear and feedback seeking behaviour

In summary, fear was a barrier to seeking feedback. Students feared an unfamiliar clinical environment and feared clinicians, due to their seniority, hierarchy and perceiving them as generally intimidating. Clinicians could come across more intimidating if they felt this was the way they were supposed to be or were stressed from their workload. Students also feared the possible negative content of the feedback, which could make them lose confidence and impact on their sense of professional identity. Students who viewed the feedback as a summative judgement of their performance rather than a formative learning experience also feared feedback if they did not feel they had performed well.

The concept map below shows the relationship between fear and feedback seeking behaviour.

Figure 7 Concept map to show the relationship between fear and feedback seeking behaviour
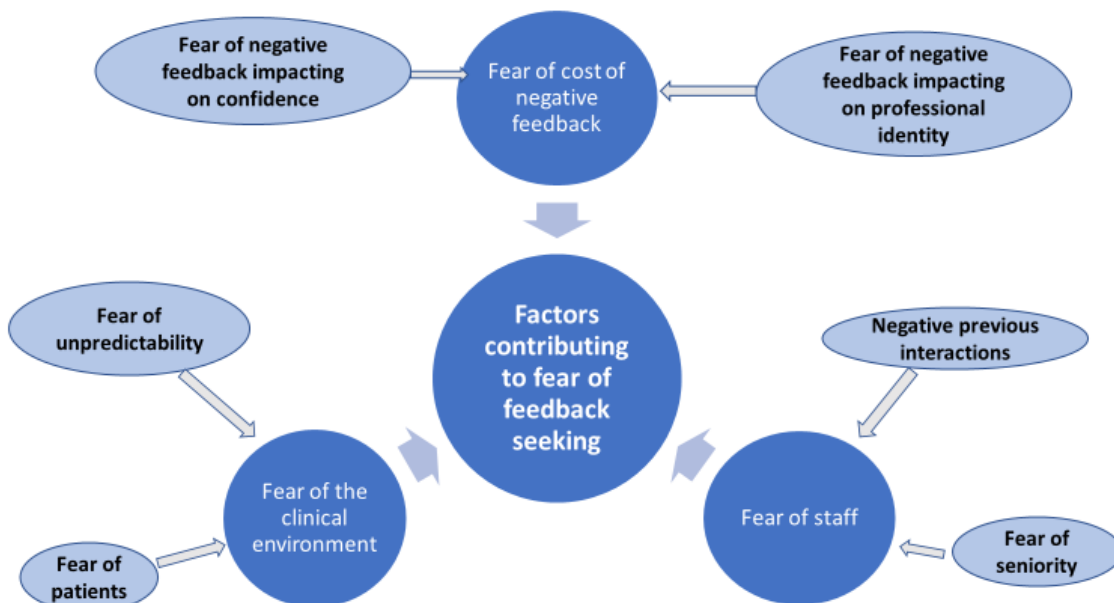
8.3 Confidence

Confidence is a poorly defined term, as discussed in section 2, but can refer to learners feeling they can perform a task, while lack of confidence refers to experiencing uncertainty and anxiety rather than feelings of incompetence (Roland *et al.*, 2015; Stewart *et al.*, 2000). Interestingly, in my interviews, while some students used the term "*confidence*" to describe feeling able to perform a task, such as being able to seek feedback, others referred to it to describe assertiveness or even resilience.

Students' level of self-confidence influenced whether they sought feedback. Students with more self-confidence, using the term to mean assertiveness and some referred to as being "*pushy*", increased

their likelihood of seeking feedback by helping overcome fear of approaching clinicians, and fear of receiving negative feedback. They also needed confidence to cope with any negative feedback. However, they also appreciated that being too confident made them less likely to seek feedback, because they may not feel they need feedback because they could already perform the task.

Steve Y5:

> if you're going to do a one to ten scale, I think the student with the confidence around range five to eight is going to ask for feedback, because they don't have too much confidence, at the same time they don't have very little

Sue Y5:

> Having too much they might be like, I don't need feedback. Having too little they might be scared to ask for feedback.

However, students who perceived themselves as not very confident did not feel able to approach clinicians to seek feedback, especially if they found them intimidating or were surrounded by a large group of clinicians in a ward round. They also worried about how well they might cope with the feedback, with less confident students being more reluctant to seek feedback in case it damaged their confidence even more.

Rachel Y5:

> You just go to someone and say oh how could I do better, I don't know, I might not even have the confidence to do that, depending on how intimidating that member of staff is.

Jim Y5:

> I take feedback really critically. Most people can brush it off, and take it as an ego boost. I normally take it negatively. So even if its positive feedback I still take it critically."

8.3.1   Confidence increased as they became more experienced

Levels of confidence increased as students progressed through the course, so they were more likely to approach clinicians. They attributed this increased confidence to being more aware of what was relevant for them to learn, having more knowledge, having previous useful feedback which increased

their confidence, and learning how to approach clinicians successfully and being more "*well-rehearsed in asking*" for feedback with no consequences.

Sandra Y4:

> *I think now that we're going more through the years, I'm more confident to ask specifically in things that I think I need to improve or I want to get practice on, 'cause I know what I want and what I need, which wasn't the case last year.*

Rachel Y5:

> *I have become better at approaching people for feedback as I have gotten older, and probably more confident. And not having anything bad happen because I think earlier on in medical school there was a fear about what would happen if I ask for feedback? I don't know what to say?*

In summary, increased confidence made students more likely to seek feedback, while insufficient confidence made them less likely to approach clinicians and they worried if they had confidence to cope with negative feedback. Confidence improved as they progressed because they developed successful strategies to approach clinicians, overcome their fear of clinicians and had more successful previous experiences.

8.4 Age and Experience

8.4.1 Familiarity reduced fear of seeking feedback

As students progressed through the course, they were more likely to seek feedback. Earlier I discussed the impact of fear as a barrier to feedback seeking. Students could overcome fear through previous experiences of being in the clinical environment, approaching clinicians and asking for feedback with no negative repercussions. They became more familiar with seeking feedback and described "*getting used to it*", which made it a less intimidating task and helped them to develop "*more confidence*" to seek feedback.

Rachel Y5:

> *so if we were being encouraged to seek out feedback earlier on in medical school, we might get to the stage we're dab hands at it...it took me, you know, two years, before I regularly started asking people for it*

8.4.2 Developing successful strategies to seek feedback

They also developed strategies to overcome some barriers they found challenging when they were younger, leading to more successful feedback seeking attempts. For example, many struggled with

seeking learning opportunities on a ward if the clinician was busy or asked them to return at a later time, needing "*courage*" to stay or to return once they had been sent away. As they became more experienced, they learnt which strategies were successful, such as remaining in the ward despite being sent away or seeking alternative learning opportunities, such as asking to help out with certain tasks.

Sandra Y4:

> *when you got sent away, you needed to double-dare to go back to a place where you've already been turned down…actively not go away, even if they say, oh come back in an hour. I'm like, oh well is there anything I could do? Could I maybe look at some notes? Just to be present. And if nothing else, be a visual disturbance to them. So, they eventually say, okay I'm taking blood from this patient. Do you want to come?*

8.4.3 Learning to cope with negative feedback

Students appreciated if they sought feedback, they risked receiving negative feedback. Coping with negative feedback could be challenging and could impact on self-esteem. They had gone from achieving positive feedback and results at school to being challenged more at medical school, not always succeeding. This was something they learnt to cope with through experience.

Dr C_Hospital:

> *they're all over-achievers, they've all done well in exams. They've probably had nothing but positive feedback for their entire school careers. And now, in this clinical arena, they're going to make mistakes.*

Rachel Y5:

> *I think sometimes it's very hard to know, like, is this me? Am I really doing this wrong? Or are they just…..And you kind of just need to learn to identify when you can shrug it off and when you can't. But that can be very difficult, particularly when you when you're inexperienced.*

As they progressed through the course, they became more accustomed to receiving negative or constructive feedback. They became less "*sensitive*" and developed coping mechanisms to deal with negative comments with less damage to their self-esteem, so negative comments did not upset them as much. They developed a lower expectation that they would perform every task perfectly and were more likely to make mistakes which could be remedied.

Rachel Y5:

> *right in the beginning, the perfectionist drive is in most people in medical school. It's like, but I just want to be so good at everything. But you get to the end of five or six years…there's just a bit more apathy about it because you can't be like that all the time because it's just exhausting!*

Sue Y5:

> *I was still sensitive, but I grew over the years, I kind of got stronger, and I understand you don't have to get upset over every single thing someone says.*

Steve Y5:

> *I'm older and I'm a postgraduate, so the comments that I have received and the experience that I have had haven't really got me down. They've annoyed me, but they haven't got me…*

They also weighed the cost of receiving negative feedback with the benefits of being able to perform the task well when they became a doctor, so were more likely risk receiving negative feedback as potential benefits outweighed the cost.

Rachel Y5:

> *but I think that's your responsibility as an adult, to be like, this is the thing that I need to get feedback on because I need to learn that…ok it's not very nice to hear that I'm rubbish at this but I need to know that!*

Dr C_Hospital:

> *when you get to a certain stage in your training, positive feedback is helpful, but it's not nearly as helpful as someone saying, you got that a bit wrong. Because you know you're going to make mistakes*

Some clinicians reflected on their own experiences of receiving negative or constructive feedback during training, and discussed how they learnt to not be so upset by negative feedback and to use it in a constructive way, instead of taking it personally and using it as a measure of self-worth.

Dr C_Hospital:

> *not always taking things to the core, so it doesn't always feel personal. It's just the way that person operates, the way that department operates, the way that ward operates, and then it's not quite so intimidating, 'cause it doesn't feel quite so personal.*

In addition, they placed a greater value on "*honest*" feedback as they neared graduation, so were more likely to seek out ways to improve their performance on tasks that were important to working in an FY1 role so they could perform these tasks better. Clinicians also noticed that younger students found it challenging coping with negative feedback, so they found it difficult to deliver and therefore were sometimes less honest. They were more likely to give honest feedback as students became more senior because it was more important for them to be competent at these tasks so near to becoming a junior doctor.

Rachel Y5:

> *spending time with the doctors and doing jobs that they do. Because at the end of the day that's what we're going to be doing in a horrifyingly short period of time*

Dr B_Hospital:

> *…students I don't think will handle that truth at that point in time. And it might be, it's early on in the course, where you're thinking, that's not very good today, but you're coming…It's the same with a child. You're not always that truthful with them, but just to keep them going and be positive, rather than say, that was absolute rubbish.*

8.4.4   Different learning environment later in the course

Learning delivery changed as students progressed through the course. In year 3, they received more formal teaching, such as tutorials and scheduled bedside teaching. However, in year 5, they became more experiential learners and the learning environment took on a more "apprenticeship" model. They were expected to use the knowledge and skills they had developed so far to participate more in clinical activities. As a result, students felt more "*comfortable*" in the clinical environment, developed a more useful "*role*" in the clinical team and found they were exposed to more learning opportunities to seek feedback for (section 8.1).

Darcy Y5:

> *And just by us feeling more comfortable with doing this you end up learning a lot more by it. But I think in 3rd and 4th year, it's more about observation.*

Sally Y5:

> *if I'm in 3rd or 4th year what can you give me feedback on? I think that's the difference. It's more coming together a little bit more now.*

Students also described clinicians having a different attitude towards them as they became more senior. Clinicians echoed this different attitude, describing senior students as becoming "*more like young doctors*".

Darcy Y5:

> *we're a bit more trusted in the ward*

Lisa Y4:

> *I think in third year, I definitely felt like most of the time you were just in the way and didn't really know anything…we're more useful than we used to be.*

8.4.5   Concept map describing how age and experience promote feedback seeking

In summary, students were more likely to proactively seek feedback as they progressed, because they became more familiar with seeking feedback and developed more confidence to overcome the fear of not knowing how to approach clinicians. They learnt strategies to successfully seek feedback and cope with receiving negative feedback, with less risk to self-esteem. The expectation to learn through experience rather than formal teaching sessions enabled them to do more tasks and so feel more comfortable seeking feedback from clinicians. They learnt more through apprenticeship and were given more trust and hence autonomy in the learning environment.

The concept map below summarises the how age and experience promote feedback seeking behaviour.

Figure 8 Concept map to show how age and experience increase feedback seeking behaviour

118
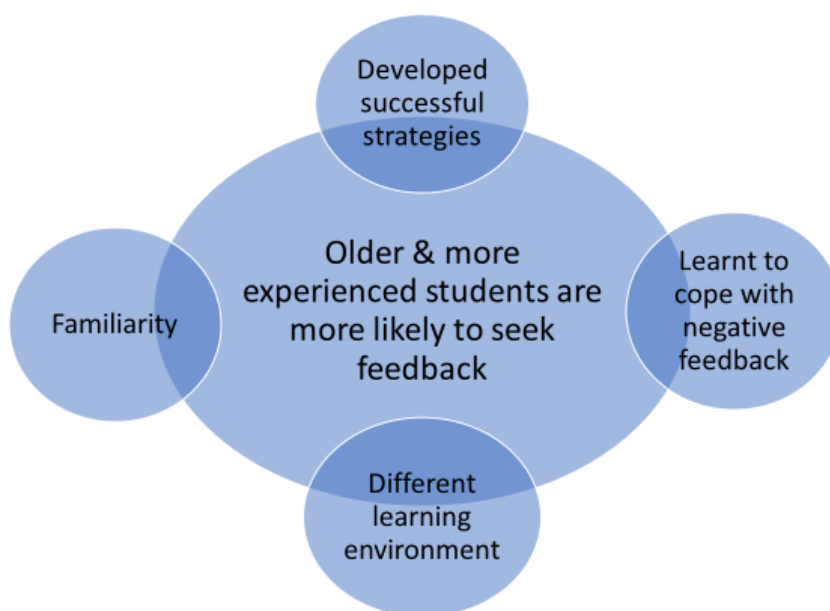
8.5 Previous feedback seeking experiences

8.5.1 Negative past experiences of feedback

Previous negative experiences made students reluctant to seek feedback again. Receiving negative feedback which upset them often made them fearful of further negative feedback and being "*frightened to interact with other staff*". Recalling these memories drew on very memorable, upsetting emotions in some participants. Students used violent language such as "*abuse*", being "*traumatised*" and confidence being "*smashed*" when describing these past experiences. They were also reluctant to continue interacting with clinicians during their placement, in case they received further negative feedback, feeling like "*everything you do is wrong*", or like they were "*telling you off*" and further damaging their confidence.

Becky Y5:

> *I had a staff member who for three weeks just gave me abuse...and by the end of it I was so worn down. And I think I had kind of withdrawn a little bit, away from the rest of the clinical team, because I just didn't feel very good about myself.*

Rachel Y5:

> *just completely mortified and you don't want to be like, do you want to tell me how bad I am all over again?! So you're not going to ask that again!*

8.5.2 Unsuccessful past experiences

Students also described unsuccessfully seeking feedback, either because they received no feedback at all or the feedback was unhelpful because it was too brief and generic, such as "*keep practising*". Students discussed how unsuccessful attempts to seek feedback made them reluctant to expend further energy in feedback seeking attempts, perceiving the cost, such as time taken to seek feedback, outweighing the benefits. These previous attempts were not limited to the clinical environment as they also described previous attempts to seek feedback in another setting, such as failed attempts to seek feedback on summative exam performance impacting on their likelihood to seek feedback in the workplace.

Darcy Y5:

> *I have asked for it [feedback] a few times and constantly got the same reply. And you just get to a point where you just give up and just accept that's the way it is…I've seen a patient and I go to the consultant and he's like, ok, that was good, yeah, just improve on your technique. That's not feedback for me though.*

However, in other cases, if feedback lacked clarity, they sought further feedback to ensure they had the key messages, had not misinterpreted them and to ensure they understood.

Eilidh Y3:

> I think the feedback was just quite vague and I just wanted to know a wee bit more about why I'd gotten the mark [on the miniCEX form] I got and what I could do to improve.

8.5.3 Positive past experiences

Previous experiences of successfully receiving useful feedback when sought encouraged students to seek feedback again, especially if that feedback improved their performance or helped with tasks they were struggling to perform. This increased the perceived value of the feedback, so they sought feedback again because perceived benefits outweighed costs.

Becky Y5:

> If I've been successful in getting feedback…to go and seek out more feedback, because that's helped me, and I recognise that that's helped me so I want to go and get more.

Rachel Y5:

> that would encourage you to be like, well I did actually get quite useful feedback the last time and I learnt something from that and maybe there would be a good opportunity to ask?

In particular, if students received useful constructive feedback on specific tasks, the feedback encouraged them to practise the task more so they could seek further feedback to check they had improved and were now competent.

Annabel Y5

> because of the feedback I wanted to go try something new, to improve on the negative things a person told me, as in the ways to improve. So, I want to try that just to make sure I improve on the negative points.

8.5.4 Other peoples' experiences

Students also considered experiences of their colleagues and people they had observed. Some had observed colleagues having negative feedback seeking experiences, others heard stories from friends about negative experiences. They described stories about negative personal feedback about

colleagues' characters and other personal comments, and comments about negative reactions to feedback, such as friends being extremely upset.

Steve Y5:

> *I heard a comment recently from someone who in their feedback to this GP*
> *placement, she was called a bimbo…she was called, you're like a blond bimbo.*
> *That's just about character, comments like that can really set people off, you know,*
> *a path where they think, well, is this right for me?*

In summary, students considered their previous experiences of seeking feedback and weighed the benefits of seeking feedback, based on their past experiences, with the perceived costs. If they found previous feedback useful in the past, they were more likely to seek feedback further However, previous negative or unsuccessful experiences of seeking feedback discouraged them from further seeking feedback. Cost of negative experiences included damage their confidence and self-esteem. Many found previous negative experiences a barrier which was difficult to overcome and were still upset by them when discussing them in our interviews. Unsuccessful experiences, either not receiving feedback at all or receiving unhelpful feedback, also discouraged further feedback seeking which would take more time and energy in some cases, while other times students sought further feedback for clarification. Why some students gave up on seeking feedback and others were able to seek further clarification is an area for future work.

8.6   Self-regulated learning

8.6.1   How feedback seeking behaviour develops the forethought phase in self-regulated learners

The initial phase in self-regulation, the forethought phase, involves setting goals and planning how to reach those goals. Learners are motivated to do this by the perceived value of the task, their goal orientation, their level of self-efficacy and the expected outcome when they attempt the task (section 2).

Students sought feedback to help set relevant future goals, identify learning needs and consider how to reach their goals. These goals were related to their perceptions of life as a junior doctor, based on their observations of the role of a FY1s. For example, they observed many FY1s performing tasks with minimal supervision so they wanted to be competent at these before graduation. They sought feedback to help them achieve competence.

Jim Y5

before graduation I want to do some catheterisations… these are the things junior
doctors are going to have to do… I hadn't done a PR [rectal examination], so I went
and asked and said, would you mind observing me and giving me some feedback.
And that was useful because these are things I need to learn.

They also sought feedback to ascertain if they were at the standard expected for their stage and identify learning needs in order to reach this standard. Many described seeking feedback to get external input on tasks they felt they were less competent at so they could get information on how to improve.

James Y5

ideally you would be getting detailed feedback on whether you're up to standard
and what you can improve.

Becky Y5

there are things that I think "yeah, that's fine, not a problem" and there are things
that I think "oh…I'm still not getting this". That's the kind of thing that I will go and
see if someone can help me figure out what I'm either not doing right or not doing
to the best of my ability.

In addition to wanting feedback on how to perform specific tasks better, students also sought feedback to help manage their time on attachments more effectively to improve learning. They often described having vast amounts of material to learn and tried to be strategic with what and how they learnt. While some had developed this ability already, others found feedback encouraged them to learn more in the workplace rather than just through reading.

James Y5

it's helped me not spend so long sitting reading Davidsons [textbook] and trying to
remember things in that way… my tutor said well you haven't really been in clinic
enough, well that's helpful feedback saying that clinics are really helpful so you
should come along…they can help you decide what to spend more time on and how
to prioritise things.

8.6.2   Self-assessment mismatch

Students were also more likely to seek feedback if there was a mismatch between their level of performance and their own self-assessment, especially if they did not know what to do differently next time. They identified this mismatch through unsuccessful attempts at performing a task (such as

a clinical skill), or being told they did not perform a task well. They hoped feedback would help identify what exactly they did incorrectly and help improvement.

Rachel Y5

> But when you think you've done well at something and you've done the opposite, that's the time when I would really want feedback. Because sometimes you just think that "I just don't understand what went wrong there!" and if you don't know what went wrong how are you ever going to correct it. I think that's the time that you need feedback the most.

In summary, self-regulated learners were more likely to seek feedback to aid goal setting, identify and plan how they can reach these goals and if they were at the standard expected for their stage. Mismatch with their own self-assessment also drove feedback seeking, so they could clarify what they were doing wrong and discuss what strategies to use to improve.

8.7 Proactivity

8.7.1 Proactivity as a prerequisite for feedback-seeking

Proactive students were more likely to seek feedback, because they were more likely to create learning opportunities and seek out clinicians to ask for feedback. Clinicians also felt that it was the student's responsibility to be proactive about creating opportunities to learn and to seek feedback. While clinicians experienced students demonstrating proactivity, many wanted them to be more proactive.

Rachel Y5

> you have to create opportunities to do the thing, and then create opportunities afterwards to get the feedback. So I think you need to be quite keen to get feedback on it often.

Dr B_Hospital:

> most are proactive about asking for teaching, you know, asking for help, proactive about seeking out feedback and not expecting it just to be given to them. I think some of the onus needs to be put on the students about asking for feedback, recording their own feedback, making use of their own feedback…they're so passive

8.7.2 Proactivity developed as students became more senior

Students were initially more passive when they first started on the wards, describing times when they would not volunteer to do tasks during teaching sessions unless they were asked or "*made*" to when they were younger, and would receive feedback passively after performing the task.

Sandra Y4: [describing experiences on earlier attachments]

> *If someone didn't ask me to do something, I would not volunteer and ask…. It was my tutor's suggesting, well you do this, and then giving me feedback. It wasn't me being, I would really like to do an examination, could you watch and tell me what I'm doing right? So always, the initiation came from someone else, if you see what I mean.*

Dr B_Hospital:

> *I think a big part of it too is, especially in third year, is students having to learn to be proactive… still a bit hesitant to actually put their heads over the parapet and say, I don't know how to do this*

As they became more experienced and more senior, they gradually became more proactive in the clinical environment and learnt to be "*pushy*", to create learning opportunities and not be refused. They began to perceive learning as their own responsibility

Sandra Y4:

> *I feel more confident to be pushy…maybe not take no for an answer at the first go…say, no, I'm staying here*

Sally Y5:

> *maybe targeting students, it's their own responsibility to come forward*

Clinicians valued proactivity in students and felt this should be developed earlier. They wanted students to be proactive with learning to "*earn*" feedback instead of receiving it passively, and liked the concept of students seeking feedback because the student had to put in effort as well. If clinicians observed proactivity, students were more likely to be successful with feedback seeking attempts.

Dr C_Hospital:

> *to get that feedback, they have to earn it. I'm not going to provide feedback if they've just sat there in the lecture. So they have to volunteer to contribute to the learning to get the feedback…it's volunteering to put their neck on the line*

In summary, increased proactivity promoted feedback seeking behaviour. More proactive students created learning opportunities and put in effort to seek clinicians to ask for feedback. Clinicians valued students demonstrating proactivity, so were more likely to give them feedback if approached. Proactivity developed as students progressed through the course.

8.8   Summary of intrinsic factors which increase feedback seeking behaviour

The concept map below summarises the intrinsic factors which influence feedback seeking. Learners are more likely to seek feedback if they are more proactive, have more confidence and confidence outweighs fear, have had positive useful previous feedback seeking experiences, there is a mismatch with their own self-assessment and if they are self-regulated learners.

Figure 9 Concept map to show intrinsic factors which increase feedback seeking behaviour
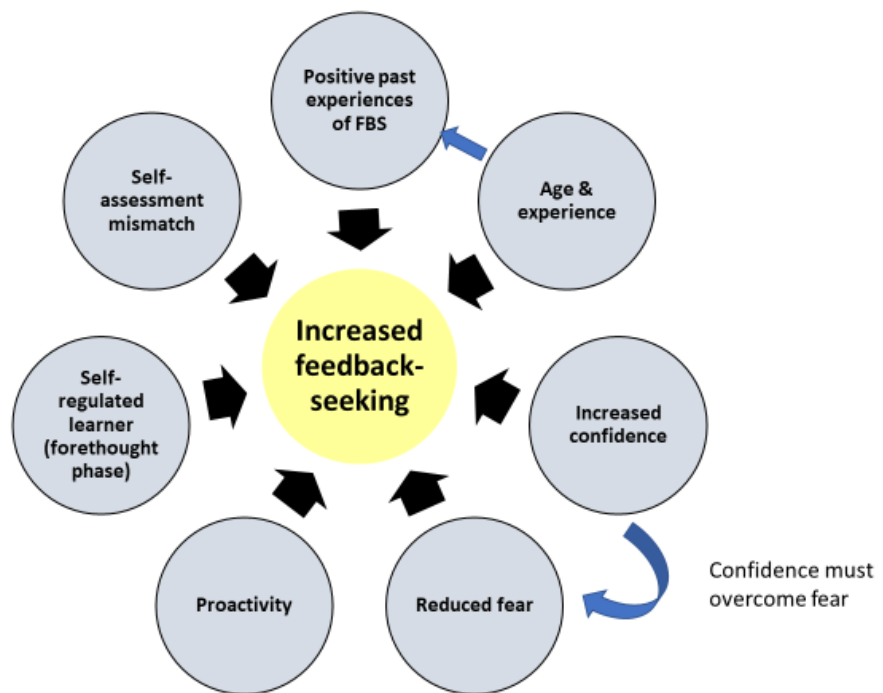
9. Motivational Theories

9.2 How does Self-Determination affect feedback seeking behaviour?

9.2.1 Introduction

The Self Determination Theory states that a learner's intrinsic motivation is increased by feelings of autonomy, competence and belonging (Ryan and Deci, 2000a).

9.3 Autonomy

9.3.1.1 Lack of autonomy reduced opportunity to seek feedback and increased autonomy increased opportunities

When students felt they did not have the freedom or were not given the responsibility to perform tasks, they did not feel able to perform the tasks they wanted feedback on, and so were unable to seek feedback. For example, not all students were given passwords to access the computer system to request blood tests and look up results, which are tasks expected of a junior doctor. They therefore did not have the opportunity to seek feedback on these tasks.

Jim Y5:

> It took me so long to get things done. I didn't have the right computer passwords and stuff. I didn't have access to Trak [computerised results system] and things like that. I could do the bloods and stuff but I couldn't order the labels for the tubes. I couldn't check all their details on Trak. I took so long to do things because I didn't have the passwords. And there was no way of getting them. And it was out of my control as well.

However, when students felt allowed to do more on their own, they perceived themselves as being more useful to the team. They performed more of the tasks they would be doing when they became junior doctors, so were more likely to seek feedback because they felt the feedback would be more useful. They enjoyed having more responsibility in the clinical environment.

Jim Y5:

I think with the assistantship you were doing more the roles of the FY doctor so there was a greater mix and you had greater responsibility… I felt that the feedback was more relevant and had more significance.

9.3.1.2 Seeking feedback increased students' autonomy

Some students described how seeking feedback enabled them to receive direct observation on their performance, so they could demonstrate their ability to clinicians. If they proved they could do these tasks well, they were more likely to be trusted to perform similar tasks alone.

Sue Y5:

> *Yes, she felt quite happy with me doing it. She would ask me questions…I would answer, like, in the first few patients. Then she was like, oh you're really good, better than most medical students, so why don't you, or it's such a busy clinic, I'll give you these sheets, why don't you…*

In summary, reduced autonomy led to reduced feedback seeking behaviour due to lack of opportunity, while increased autonomy increased feedback seeking behaviour Students felt they were more likely to develop autonomy by seeking feedback.

9.3.2 Competence

9.3.2.1 Increased competence could increase feedback seeking behaviour

Some students were more likely to seek feedback if they could already perform tasks but worried what the feedback-giver would think of them, if they would think they were poor students if they did not perform a task well. This was more pronounced if they viewed the feedback as summative if feedback-giver was the clinician giving them their grade for their attachment. Clinicians acknowledged the impact of power-imbalance and hierarchy as the more senior they were, the more power they were perceived to have, especially if they gave grades.

Darcy year 5

There's so much uncertainty about the feedback you're going to get and how that's going to impact on your grade … and medical students and a lot of people like certainty.

Dr D_Hospital:

It's just the traditional position, you know. The doctor, the consultant, is seen as a, sort of, powerful person. And obviously within a medical school it becomes even more, because…they're the teachers. They're the people that are giving marks

Final year students were more likely to seek feedback on tasks they were already competent at if they were expected to perform them alone when they became junior doctors, "*just to practise more*" to ensure competence and confidence after graduation. They identified these tasks as part of the role of a junior doctor but some found the thought of performing them alone "*scary*".

Linda Y5

The clinical skills, the stuff like, you know, cannulas and venepuncture and things like that, that you want to be able to do. You don't want to be having to ask for help.

They were also more likely to seek feedback on tasks they were already competent at if they felt they had earned the right to seek feedback and were justified in doing so by being useful to the feedback-giver. In these situations, they were more likely to perform a task they were competent at but did not seek feedback purely because of their competence, but because they were more likely to seek feedback successfully and viewed it as a reward for doing favours for the feedback-giver.

Jim Y5

I felt more inclined to ask for feedback because I felt I was helping out. The doctor wouldn't be annoyed at me for it you know. Them taking 5 minutes out of their day to send off a form for me because I had saved them some time by clerking some patients and doing some forms and stuff

Clinicians also felt that increased competence increased feedback seeking, but they felt this was because students only wanted positive feedback rather than negative, describing experiences of students not wanting to hear anything that might upset them.

Dr E_Hospital:

if the student was asking after a successful examination…not bothering to ask when things haven't gone quite so well – then you could get the impression that this is someone who is really doing very well, when they weren't, you know… the cherry-picking of good performances, and therefore as a result, not getting the feedback they need

9.3.2.2 Reduced competence could increase feedback seeking behaviour

Other students described feeling less competent at a task increasing feedback seeking behaviour. They viewed seeking feedback as an opportunity to improve performance and develop competence. In particular, final year students were more motivated to seek feedback to improve competence on tasks they were expected to perform alone when they became a junior doctor, such as catheterisation and venepuncture.

Annabel Y5:

> *the other day was the first time I did catheterisation on a patient, so I got feedback*
> *on it, because I wanted feedback on it…that helped me now want to try that still*
> *more and more, to improve on the negative things a person told me.*

In summary, being competent increased feedback seeking behaviour if the task was felt to be so important that they wanted to increase confidence in performing it, if the feedback might be summative or if they wanted a reward for performing favours for junior doctors. Being less competent increased feedback seeking if students wanted to increase competence in the task, especially if it was a task they perceived to be more valuable and important. It should be noted, however, that when talking about competence in this chapter I am referring to perceived self-reported competence. The flaws in this, including the fact that students and clinicians are poor at self-assessment, will be discussed in the discussion chapter.

9.3.3 Belonging

9.3.3.1 What contributed to feelings of belonging?

Because the feeling of belonging was such a strong, recurring theme in my data, I explored it in more detail to understand what developed a sense of belonging and how this fit with my developing theory. Students and clinicians described factors and behaviours that encouraged better integration.

9.3.3.1.1 Having a role in the team

Students wanted more ownership of roles in the team to make them feel trusted, included, useful and valued. They wanted to feel like they were wanted and that someone cared if they were there.

Darcy Y5:

> *…on the assistantship, we had a specific role. Everyone in the team knows you're*
> *there to do the job. You do the notes and the ward round … I feel like you as a*
> *medical student is needed…you have a role. And if there is no medical student,*
> *something is missing in the team.*

9.3.3.1.2 More exposure to the clinical environment

As students became more used to the clinical environment, they became more comfortable and integrated better into the workplace. They found examining patients less intimidating and became more familiar with the hierarchies of clinicians and nurses in hospitals

Eilidh Y3

I guess initially it was quite scary, you know, going into third year and it was like, everyone's
quite timid and you're not used to interacting with patients and having to examine in front
of a whole group and everything. But now everyone's a bit more comfortable, just generally.

Some students proactively developed relationships with selected groups to improve their learning experiences, for example with receptionists, phlebotomists or nurses*:*

Linda Y5:

I always tried to make friends with the nurses because… the nurses are the ones to ask, they know everything…they're so nice and you could ask them about anything and they are the ones who know what's going on

9.3.3.1.3 Positive interactions initiated by clinicians

They felt more integrated and "*comfortable*" around clinicians when they picked up positive non-verbal cues indicating that their presence was welcomed, such as having their presence acknowledged with a smile. If clinicians invested time into their teaching, it made them feel like they could approach them. Some students had even lower expectations, such as hoping the consultant would "*know my name*" or be "*willing to answer my questions*".

Lisa Y4

I think if they're approachable and friendly, like, I would ask for feedback if they were interested in speaking to you and spending some time teaching you. But if they weren't like that, then I probably wouldn't bother

If students experienced negative or even no interaction, they felt unwelcome in the workplace and were less likely to seek feedback. Such behaviours described by students included generally being ignored and not having their presence acknowledged, not being greeted and not being able to ask questions.

Sally Y5

My consultant would not even literally say hi to us. He would walk into a clinic and not say anything! You would go into surgery, just sit there. You don't understand what's happening, no one wants to talk to you. Immediately you're not going to make an effort to ask.

Some clinicians proactively tried to make students feel comfortable and make themselves more approachable, for example by welcoming them and including them in team activities to promote integration.

Dr G_GP:

So, all the staff, all the nurses, they really treat the student as a member of the team and have lunch together and chat together. So, I think they do feel it's not really a threatening atmosphere... so I think students probably get a feel that it's quite a relaxed, easy going sort of place, very friendly, so I don't think it's too threatening for them.

9.3.3.1.4   Longer placements improved integration

Clinicians preferred longer placements so they could get to know students better, develop better relationships and gain a better awareness of what students needed to improve.

Dr D_Hospital:

So I think in, for instance, medicine where they've basically got the straight eight weeks and they're on the wards all the time, they integrate into the team anyway. Whereas maybe surgery where they're doing a different thing every week with different people it's much harder to feel part of the team.

9.3.3.2   Concept map to show what contributed to belonging

In summary, having a greater sense of belonging and developing relationships with clinicians promoted successful feedback-seeking while feelings of reduced belonging reduced feedback seeking. Students also found that seeking feedback promoted better development of relationships with clinicians by demonstrating competence and awareness of limitations. Sense of belonging was promoted by developing feelings of usefulness, such as having a role in the team, gaining more experience and exposure to the clinical environment, clinicians interacting positively with them and including them in team activities or investing time in their teaching.

The concept map below summarised how sense of belonging is increased.

Figure 10 Concept map to show factors contributing to sense of belonging
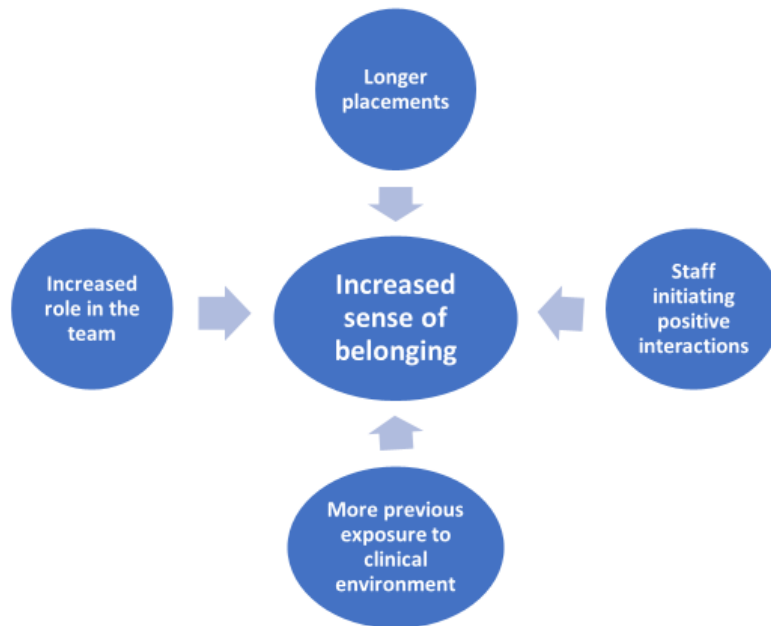
9.3.3.3   Relationship between belonging and feedback-seeking

Students who felt they had developed relationships with clinicians and felt part of the team were more likely to seek feedback. Firstly, they were more likely to be asked to perform tasks, included in activities and were more likely to volunteer to perform tasks if they thought the clinician supervising them was approachable. This increased the opportunities for seeking feedback.

Secondly, when they felt more integrated into the team and had developed relationships, they felt more confident to ask for feedback and experienced more success. Many students referred to feeling "*comfortable*" to describe the feelings of being included as part of a team.

Sally and Darcy, Y5

> *S: Often what I find the best way of doing it is…I worked all day with them. It wasn't just one thing I did… I could ask for it [feedback] and do it because I evolved. If I had walked onto a ward and taken some blood and gone, oh, would you mind just giving me feedback on that? I don't know…*

> *D: I wouldn't do it, I just wouldn't do it*

Annabel Y5:

So, you go back to the same hospital, they're like hi, wasn't that you who did so and so, how are you now, which rotation are you in? The fun circle increases, you get to know more

people…Even nurses, I get to interact with so many people, and then they will be like oh do you want to come and watch this on another day…open to more opportunities, open to more people and more experiences.

Clinicians found it easier to give feedback when asked to if they knew the student. They often perceived these students to be more engaged and felt getting to know the student improved their feedback quality. They also appreciated students felt more comfortable seeking feedback from clinicians they knew.

Dr A_Hospital:

> *It's about looking for these opportunities where students are more embedded in the units…When they're flitting in and out, they're much less likely to get feedback from people, and so, I think they will then feel more comfortable in asking for it when they've got to know those people*

If clinicians provided more useful feedback to students they knew, students were more likely to seek feedback from them.

However, if students did not feel part of a team, they experienced negative emotions such as feeling unwanted and a "*nuisance*", which discouraged seeking feedback. They were also less likely to approach clinicians they did not know well. They worried more about seeking feedback if the feedback might be personal. They wanted time to develop trust with the feedback-giver first.

Becky Y5:

> *it is really difficult to ask a stranger,* or *somebody that you haven't spent much time with, for personal feedback, 'cause it can be really quite personal.*

Jim Y5

> *"I didn't feel part of the team. And just felt like I was getting in the way more than anything. So I didn't want to ask…Whereas for the assistantship I was part of the team. I knew the doctors. I didn't really know the consultants or the nursing staff but I felt like I was able to get on with them better. I felt more inclined to ask for feedback."*

This relationship was bidirectional, so seeking feedback helped students develop relationships within the team. They gained more respect, and therefore trust, from clinicians by demonstrating awareness

of their limitations and that they would ask for help. Some students felt this allowed them to practise more tasks autonomously.

Eilidh Y3:

> I suppose it's just about building a relationship with the person and, I don't know, it makes them aware that if you're not sure about something that you'll ask. You won't just kind of keep your mouth shut and, yeah, I suppose people kind of respond well to people who want to know a wee bit more, want to make sure they're doing something right or whatever.

9.3.4 Relationship between autonomy, competence and belonging

The SDT describes the relationship between autonomy, competence and belonging and this was echoed in my analysis. Students who were competent were more likely to autonomously perform tasks in the clinical environment and were expected to be more autonomous by clinicians. Some chose to seek feedback on tasks they were likely to do after graduation so they could develop competence and therefore more autonomy. Being more competent at tasks allowed them to have a "*role*" in the team, giving them a sense of usefulness and of belonging.

Rachel Y5

> part of what makes it difficult for the earlier years is that … you do not have a role on the ward. Like, you are there, but you're not, like, part of the team. Partly that's because you don't have enough knowledge and experience to kind of get what's going on … you don't understand because you haven't done that module yet.

9.3.5 Concept map to summarise the relationship between seeking feedback and self-determination

To summarise, increased autonomy and belonging, and therefore increased self-determination, increases feedback seeking behaviour while reduced autonomy and belonging, and so reduced self-determination, reduced feedback seeking behaviour. While increased competence increases feedback seeking behaviour in some cases, in other cases reduced competence promoted feedback seeking behaviour in order to develop competence, depending on why students sought feedback and the importance of the task.

The concept map below summarises of my findings when viewed through the lens of the SDT.

Figure 11 Concept map to summarise the relationship between feedback seeking behaviour *and self-determination*
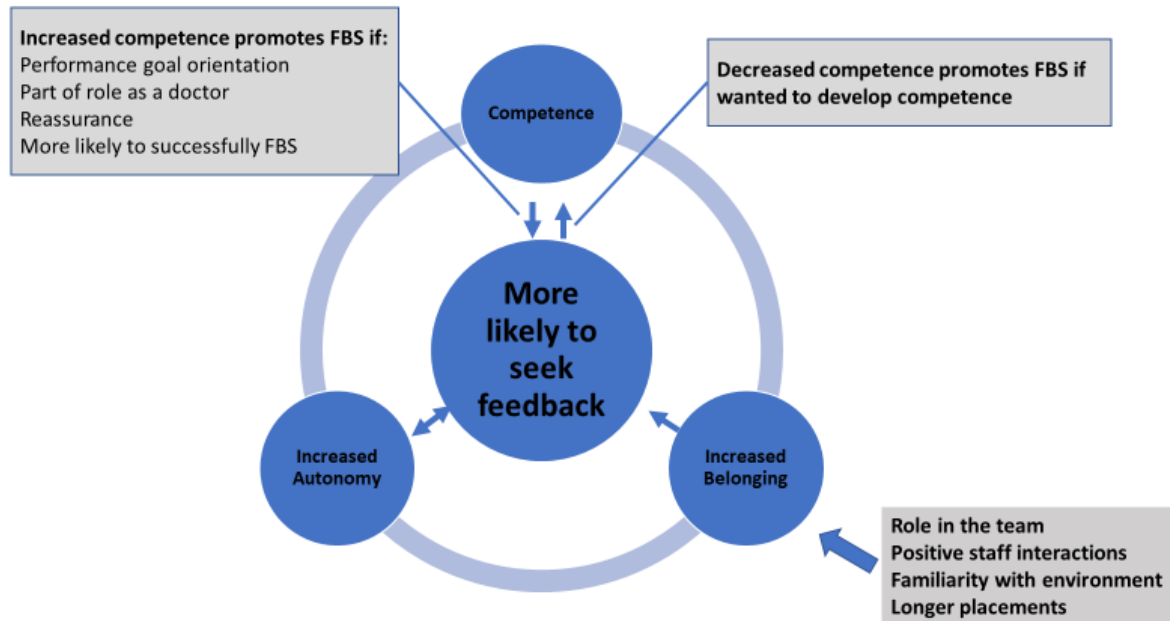
In conclusion, while receiving feedback may collide with self-determination (ten Cate, 2013), feedback-seeking has a positive relationship with self-determination with more self-determined learners being more likely to seek feedback and feedback seeking behaviour developing more self-determination in learners.

9.4 How does goal orientation affect feedback seeking behaviour?

9.4.1 Introduction

Learning goal orientation (LGO) implies that the learner is motivated to acquire new skills in order to get better at them, while performance goal orientation (PGO) describes a learner who is motivated by the desire to demonstrate and validate how well they perform a task and often wish to avoid negative judgements. Students may vary between LGO and PGO at different times.

9.4.2 Learning Goal Orientation

9.4.2.1 Wanting to learn more or improve

Students were motivated to seek feedback to get external information on how to improve at tasks and to learn more. They used feedback seeking as a way of starting a conversation with the clinician to initiate a feedback dialogue and create a new learning opportunity to get more teaching about a case they found interesting.

Linda Y5:

Getting constructive criticism and knowing what to practise, what you did well…
often it leads to interesting discussions as well because I would present a patient I
was curious about, you know, to ask what's going on with them, I don't understand
what's happening

They were especially driven to improve on tasks that were relevant to a junior doctor's role. They found this feedback valuable because becoming competent enough to perform these tasks with little supervision was one of their priorities before graduation.

Sue Y5:

and highlight things that I could work on in the future which is really helpful,
because you're not a perfect doctor when you graduate, and it's all about learning
and building on your skills and building on your knowledge. Building on things that
you did wrong

9.4.2.2   Check they are on the right track

Students also sought feedback to check "*are my ideas correct*" or to "*reinforce*" ideas from previous feedback, which they had used to adjust how they performed a task and wanted to check if they had improved.

Steve Y5:

if you're willing to learn, you want feedback, because you want to better something
you're doing. Or someone reassuring you that you've done something that's really
good at the medical student level.

Linda Y5:

I know in my head if I'm improving at something, but it's always good to get that
reaffirmed if you are at the level that you should be

As described earlier, the need for reassurance was particularly prominent when considering tasks they would need to perform when they became a junior doctor to be competent enough not need as much supervision after graduation.

Rachel Y5:

maybe that is a thing I'm going to do every day as an FY1 and I need to know before
I start work for my own piece of mind that I know how to do that! And I need to ask
have you got any tips for that or whatever.

9.4.3   Performance Goal Orientation

9.4.3.1   Effect of perceived summative feedback

If students thought the feedback would be used as a summative judgement rather than just an opportunity to learn, they were more reluctant to seek feedback. They did not want to risk the cost of receiving negative feedback which could affect their grade, and hence potentially affect whether they passed the module, even if there was only a small risk that the feedback would be used summatively. Interestingly, students still worried about this even after the medical school removed end of attachment grades from the course. Students who described seeking feedback to improve (i.e. described a LGO) in other sections of their interview then later described moving to a PGO if the feedback was summative instead of formative.

Sue Y5:

> *There's so much uncertainty about the feedback you're going to get and how that's going to impact on your grade in the PPD situation [end-of-attachment grade, which had been removed] and medical students, and a lot of people like certainty.*

9.4.3.2   Risk to confidence and self-esteem

Students were anxious about losing "*confidence*" and getting "*upset*" by receiving negative feedback. Some described anecdotes where they had received a lot of negative feedback, which made them upset and "*withdrawn*" (chapter 7.5). Sometimes they valued themselves according to other people's opinions and found it difficult to separate their sense of self from how well they had performed the task, so "*grades or their performances become central to a lot of their personality* ", affecting self-esteem.

Steve Y5:

> *So, if you're given a grade D, you feel like a grade D person…the grade sort of becomes the person or the feedback, the performance and the feedback on that becomes more and more part of your person…the person can maybe be badly affected by bad feedback, so maybe avoid feedback.*

9.4.3.3   Motivated by exams

Students' choice of jobs after graduation depends partly on their medical school ranking, based on exam performance. As a result, they worry about exam grades as this could affect them getting their chosen job.

The desire to perform well to get a good grade motivated many students to seek feedback. Others were afraid of failing, especially if they had performed poorly before or had heard rumours about colleagues who failed exams when they thought they were actually performing well. The fear of failure

promoted feedback seeking because they didn't trust the current "*infrastructure*" of the medical school to identify if they were at risk of failing. These students wanted to receive information from EMS that they were under-performing and viewed it as school's responsibility to provide this, but sought feedback because they did not trust the school to provide this information accurately.

Sally Y5:

> she went into 5th year and failed surgery out the blue. She didn't understand why and was like, what happened?...There were a few threads coming through that perhaps people had issues early on and they hadn't been flagged up. And it's got to Finals. And I think that shows that the feedback, or rather the infrastructure of picking up if you're struggling, is down.

Darcy Y5:

> And I'm really scared about it. It's not just because its Finals, it's because over the past I've passed but I've not done extremely well. And no one has ever sat me down to say why.

Clinicians felt most students had PGO and so exams were one of the biggest motivators for feedback seeking. Many thought students sought feedback to learn to pass exams and "*get better scores*", rather than learning to become a doctor.

Dr C_Hospital:

> the idea that some feedback may not be about scoring higher on a test, but it might be about how you manage as a junior doctor just, kind of completely goes over them, because they're just thinking, test, test, test, they're so exam focused

Dr D_Hospital:

> the students are so obsessed with position in class and competition and marks and things. So they're probably hoping to impress you...driven by assessment results, rather than personal development by itself.

Clinicians seemed almost derogatory of and exasperated by students who sought feedback to improve their exam results or due to worry about failing. However, with such high stakes if they do not perform well in exams, is it any wonder that they are so concerned about their grades and ranking?

9.4.3.4   Image management

Some students described the desire to "*impress*" clinicians or their peers in their teaching group as a motivator to seek feedback. Clinicians also noticed this. Students wanted to look good in front of

clinicians and wanted their approval. As a result, some students sought feedback if they had performed a task well so a clinician would notice how well they had performed and think highly of them.

Sally Y5:

> *You don't think you're being scrutinised. Oh my god! When I've gone back to accommodation they [fellow students] go do you see so and so do that, wasn't it awful! Absolutely scrutinised!...The student has an incentive in that they want to impress.*

J_Nurse:

> *actually, I didn't cope with that well, [J_Nurse] might think I'm a bit shit, I'm not going to ask him for feedback*

9.4.4 Concept map summarising how goal orientation influences feedback seeking

In summary, students either had a LGO or PGO motivating them to seek feedback. Some sought feedback to learn or develop competence, especially for tasks they wanted to perform well before becoming a doctor. This could be because they worried they would not find supervision for these tasks when they became an FY1, because they wanted to be a "*good*" doctor or because they were worried about compromising patients.

Other student were motivated by a PGO to seek feedback, wanting to improve exam performance or portray a positive image to their colleagues or a senior clinician. They were inhibited from seeking feedback if they worried that receiving negative feedback would affect self-esteem, confidence or grades.

This is summarised in the concept map below.

Figure 12 Concept map summarising how goal orientation drives feedback-seeking

Driven by learning GO

Wanting to learn

Wanting to develop competence

Check they are on track

Value of task as a junior doctor

Seeks feedback

Driven by performance GO

Not summative

No fear of loss of confidence or self-esteem

Increased fear of failing exams

Image management
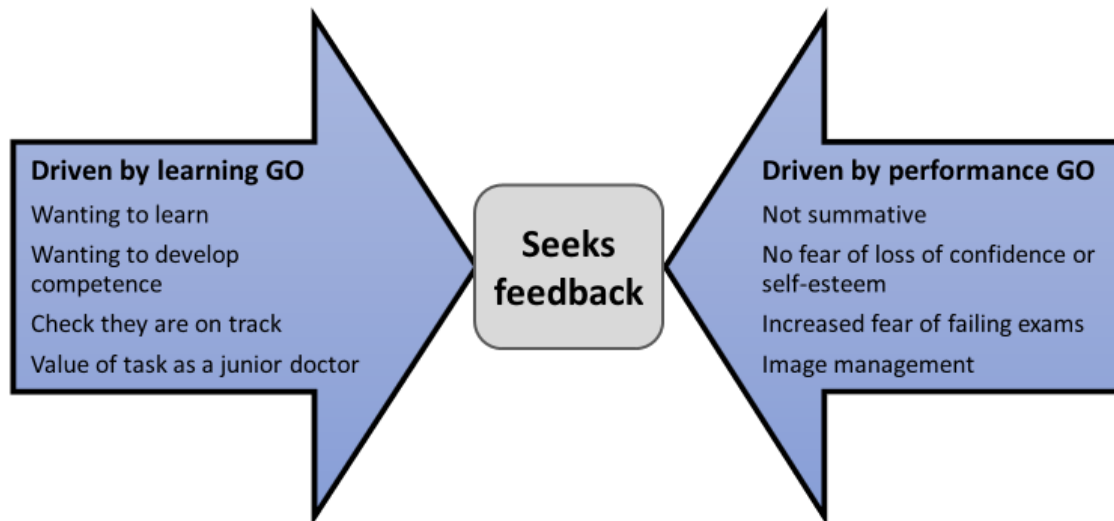
10. How feedback factors promote or inhibit feedback-seeking

10.2 Introduction

So far, I have described the intrinsic factors which influence students seeking feedback. This section will discuss the feedback factors influencing feedback seeking behaviour.

10.3 Summative v formative feedback

As discussed in the previous chapter, students worried about the cost of negative feedback on their grades and were more likely to seek feedback if it was not summative. This worry often outweighed the potential usefulness of constructive feedback. They preferred formative feedback, describing these more positive experiences as being more "*friendly*" and "*relaxed*".

Steve Y5:

> *fifth year is formative feedback, so you don't have this PPD mark [summative end-of-attachment mark]. So, they are kind of relaxed and they kind of, you know, talk to you in the non-formal way most of the times when they give feedback. Whereas when it counted, I felt like they were so strict about it, but obviously it counted.*

Dr A_Hospital:

> *they are immensely strategic, and they all think any negative comment will sit somewhere on a record and may count against them and everyone wants to know*

They also worried feedback might highlight areas they did not perform well in, which could impact on their grades.

James Y5:

> *So, say you think that something hasn't gone well, but someone was giving you summative feedback, you wouldn't want to point out what you didn't do well*

Some viewed feedback purely as a summative judgement telling them they had failed or weren't good enough, rather than a formative discussion on how to improve performance. The fear of being told they had failed inhibited them from seeking feedback. Clinicians also described students viewing feedback as a summative "*judgement*" telling them they were a failure. They acknowledged that

students found it "*distressing*" and "*upsetting*" to be told they had failed a task, so were afraid to seek feedback.

Sandra Y4:

> *I think it's just being scared of not being able to do it properly…because I didn't think I would do it well, so I just didn't. I just found it intimidating to ask.*

Dr A_Hospital:

> *This judgement is very, it feels very damning…they don't get many moments in their early career where someone actually tells actually you performed really badly there, and so I think it comes as a shock. They find it very difficult and distressing.*

On the other hand, as described in chapter 9, they also wanted feedback which could help them to identify where they were underperforming. Many heard stories of colleagues who failed exams and they worried this could happen to them, and areas they were underperforming in had not been identified yet. They wanted a feedback system to help identify areas of underperformance so they did not risk failing. For some, the cost of failing Finals outweighed the cost of receiving negative feedback or a receiving a negative grade.

In summary, students were less likely to seek feedback if they perceived the feedback was summative due to fear of impact on their grades and highlighting underperformance. They feared being judged as not being good enough, but also wanted to be told they were underperforming because they feared failing high-stakes exams more. They weighed the costs of seeking feedback against its perceived value.

10.4 Predicted feedback sign

Some students hoped for constructive feedback identifying where and how to improve. They were reluctant to seek feedback if they thought they would get negative feedback because they knew they had underperformed, especially if they did not want to disappoint the clinician supervising them. Sometimes, they adjusted how they sought feedback in the hope that it would not be too negative, especially if they wanted feedback for reassurance or to boost confidence.

James Y5:

> *It's more difficult to ask for feedback if there is something you don't think you've done well I guess… and say, the tutor looked a bit disappointed, you may not want to push it too far*

Annabel Y5:

I hope I was helpful, I hope I did that well. Those two questions kind of open up the answer to like what I'm looking for to give me some confidence, yes you did that well.

However, students still valued receiving constructive feedback if the feedback was useful and helped them improve.

Becky Y5:

I think most people are happy to hear, like, what they've done wrong and what they need to do better. And I know that sometimes, you know, it probably is necessary to be a bit harsh because you do need to be a bit...you have to be realistic, but there are ways of doing it, I think!

Some students were more likely to seek feedback if they had performed well, wanting positive feedback for reassurance or if they lacked confidence. However, many clinicians felt students were more likely to seek feedback if they had performed a task well because they had performance GO, as described earlier.

10.5 Perceived value of feedback sought

Students were more likely to overcome feedback seeking barriers and were more likely to seek feedback if they anticipated that the feedback was valuable to them, especially if value outweighed cost. Several factors influenced their perception of how valuable feedback was.

10.5.1 Verbal v written feedback

While some preferred written feedback because they were more likely to remember it, most felt verbal feedback was more valuable because, from their experiences, written feedback was often too brief or non-specific to be useful. Illegibility was also a common complaint. Furthermore, verbal feedback was faster for clinicians to deliver than written feedback, so were more likely to successfully ask and get it because they felt clinicians were already very busy and they were imposing by wanting teaching.

Questionnaire winter 2015, Y4:

Quality of feedback is often better when given verbally, where there can be a dialogue e.g. what I did well, why I did it well, how I can improve, rather than a rushed note "Good technique. Improve examination."

10.5.2 Honest feedback

Students valued feedback which they perceived to be honest. While many wanted positive comments for reassurance, they also wanted clinicians to provide an honest opinion on what they needed to improve and how. Many felt that they usually received feedback which was "*too nice*" from clinicians, despite feeling constructive feedback would be more useful.

Linda Y5:

> *I think a lot of people are a bit too nice. I've got a lot of nice comments and probably not enough of these are your weak points or things you can improve on…people who give feedback, they're more inclined to say the positives rather than the negatives because they don't want to come across criticising you.*

When they did receive constructive feedback, while they found it difficult to cope with, they appreciated it and found it more useful and valuable.

Jim Y5:

> *It was a bit of a kick in the teeth, you know, but I think it was honest feedback which I did appreciate. It helped me focus my efforts and brush up which was good.*

Clinicians agreed they sometimes found it challenging to deliver honest negative feedback, because they did not want to upset or demotivate the student, or they lacked confidence on how to deliver useful negative feedback. Others worried about how much extra time delivering honest feedback would take if they needed to justify it or console an upset student.

Dr B_Hospital:

> *So, there is sometimes a lack of honesty…tutors have told me that they've found it sometimes difficult to be honest with certain students. Because of the fear of the student cracking up in front of them… sometimes, it's simply the student, I don't think will handle that truth, at that point in time.*

10.5.3 Feedback to help them be a safe doctor

Students placed more value on feedback on how to be a better doctor after graduation. They valued feedback relating to tasks they saw junior doctors perform with minimal supervision, so they wanted to perform these to a satisfactory standard by graduation (see section 7.6). They also valued feedback on behaviours, such as working with other professionals such as nurses and pharmacists.

Linda Y5:

> *it's useful to get feedback from nurses about things like teamwork because that's the whole point of teamwork, it's not just the doctors, it's the doctors and the nurses and the pharmacist and everyone on the team.*

Level of competence influencing feedback seeking behaviour is discussed in 9.2.

10.5.4 Importance of the task

While feedback on tasks and behaviours needed to become a junior doctor was valuable, students found feedback less valuable if the task was perceived to be less important. One example given was feedback on handwriting, since many hospitals are now acquiring computerised documentation.

Steve Y5:

> *bad handwriting or things that you think, well, peripheral things. So, you try and reflect on it, but you think, well I don't think that's necessarily a big deal, so I'm going to think a bit more about. It's a shame if the feedback is about the peripheral stuff and not about what you thought was the most important thing that day*

10.5.5 Credibility of the feedback-giver

Students valued feedback more when they perceived the feedback giver to be more credible. Credibility improved if the student and feedback-giver got to know each other and had observed the student's performance over time.

Sally Y5:

> *he [the consultant] got to know me a bit, seen me do some work, chatted to people who had worked with me on the ward, I felt he could say yeah this is good, maybe you need to work more on this. But he could do that because he knew me a little bit.*

Junior doctors were more credible because students observed them in the role the students would be in very soon. They felt more senior clinicians could not relate as well to what it is like being a junior doctor, and even forgotten how to perform certain tasks, so were less likely to give valuable feedback. In particular, they enjoyed receiving feedback from FY1 doctors as they had been students only the year before.

Darcy Y5:

The best feedback I have received is from the FY1s. I feel like in 5th year when you are on the wards, you are trying to learn the job for next year…give you small tips of how to improve and stuff.

10.6 Ease of getting feedback

Students were more likely to seek feedback on tasks that were easy to be observed performing. For example, they preferred to seek feedback on clinical skills, such as venepuncture or inserting cannulas. Although some struggled with other more complex tasks, such as taking histories or developing management plans, they were less likely to seek feedback on these tasks because they took longer to be observed so were less likely to be successful in getting observation and feedback. They also had more opportunity to seek feedback if they were already being supervised, for example when already being observed performing an examination in front of a clinician.

Sandra Y4

Skills is easiest, taking blood…I think the one I found hardest to get any feedback on was patient management discussions. Unless it was a formalised presentation that then took half an hour or longer, trying to get feedback on a discussion of a patient just never went down really well.

Lisa Y4:

if someone's there watching you do it, then, yeah it's easy…if they're already with you, like, they're already involved, so then it's easy to be like, how do you think I did? Whereas then if you go and, like, present to someone, they're not as involved

10.7 Concept map to summarise how feedback factors promote feedback seeking

In summary, students were more likely to seek feedback if they perceived the feedback as formative and non-judgemental or if the feedback was predicted to be valuable. Students placed more value on predicted feedback if it was verbal, they thought it was honest and a true reflection of their performance, the task was important to their current or future role and if it could help them become a safe doctor or if the feedback-giver was credible. Some sought positive feedback, for example if they lacked confidence or wanted reassurance, while others wanted constructive feedback to improve. The majority of students, however, valued feedback which was well-phrased and delivered to not come across negatively and reduce confidence. The concept map below summarises how feedback factors can promote feedback seeking behaviour.

Figure 13 Concept map summarising how feedback factors promote feedback-seeking
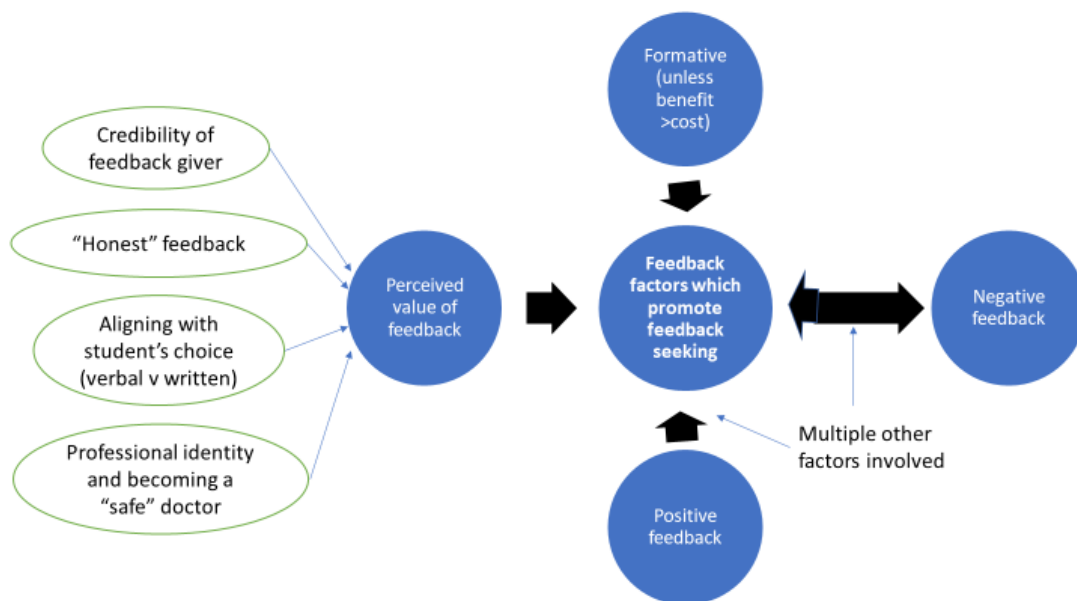
11. How extrinsic factors promote or inhibit feedback-seeking: staff factors

11.2 Introduction

The preceding chapters have discussed the intrinsic and feedback related barriers and promoters to students seeking feedback. Feedback seeking is also influenced by various extrinsic variables which are out of the students' control. The next two chapters discuss these extrinsic variables, starting with factors relating to clinicians.

11.3 Approachability of clinicians

Students were more likely to select approachable clinicians to seek feedback from, with some clinicians being perceived as being more receptive and friendlier than others.

HY Y5:

> *you, kind of figure out at the start of your rotation how approachable they are and how willing they are to help and then that, kind of, sets up how much you can go and ask them for help.*

Students judged approachability on how proactively clinicians welcomed students, created teaching opportunities or encouraged them to interact with them and their non-verbal body language. They perceived clinicians as more approachable if the clinician initiated the first contact with the student, encouraged them to ask questions or even acknowledged their presence through even a smile.

Lisa Y4:

> *Maybe non-verbal cues in the person you approach on the ward…I think if they're approachable and friendly…I would ask for feedback, if they were interested in speaking to you…but if they weren't like that, then I probably wouldn't bother*

Many found lack of approachability an extremely challenging barrier to overcome, especially on short placement when they did not have time to get to know them and therefore find out how best way to approach them without getting on their bad side, which could invoke a negative reaction, refusal or impact on their opinion of them.

Jim Y5:

It's different if it's a patient but if its somebody you're working with you don't want to tick them off…I tried to avoid him

Rachel Y5:

you follow people…who, like will just be really grumpy with you all week and everything you do is wrong. Sometimes it's very hard to know, like, is this me? Am I really doing this wrong? Or are they just, is that just them?

11.3.1 Seniority made clinicians less approachable

Students preferred to seek feedback from junior doctors such as FY doctors and registrars because feedback was more valuable (as described earlier). However, senior clinicians were less approachable due to seniority, while they felt junior doctors made more effort to be approachable and friendly because they remembered what it was like to be a medical student.

Linda Y5:

I suppose, I don't know, it's just an authority thing, you know, the food chain, it's easier to ask an FY1 for their feedback because they've just been a medical student, it's just harder to go to the top of the chain and ask if they have time.

Jim Y5:

junior doctors, they tend to be nice because they remember when they were students once, they remember what it's like.

They also found other health professionals, such as nurses, more approachable than senior clinicians so were more likely to seek feedback from them as well.

Linda Y5:

the nurses are the ones to ask, they know everything and they're so nice and you could ask them about anything

Interestingly, clinicians appreciated that they could be perceived as being intimidating due to their seniority and the power they hold over the student's ability to progress through the course. Their seniority made any negative feedback they provided more credible:

Dr A_Hospital:

you forget as you age how intimidating you will appear to students… you're a senior person whose been here a long time… they also see you as, maybe, some

kind of role model…this is a judgement from on high. This judgement is very, it feels very damning

11.4 Credibility depended on expectations of feedback

Students selected a feedback-giver based on what they wanted feedback on. For example, they sought feedback from junior doctors on how to be competent at a task, be safe and perform a task correctly, as this was the level of competence they were aiming for. Junior doctors were more credible at giving feedback on what they needed to be competent at after graduation and how to become competent at those tasks, because they had recently experienced this.

Rachel Y5:

they've been where you are more recently…they can appreciate what's relevant at your stage. They can appreciate what you need to be good at or not because they already went through it.

They approached consultants if they wanted feedback on specific areas of knowledge, or improve on tasks they saw consultants perform on a regular basis, such as examining patients which they observed them do in clinics. However, they felt they did not know the level of knowledge they were expected to attain and tended to teach to a more senior level expected for postgraduate exams. Consultants lacked credibility in giving feedback on more simple, daily tasks such as basic venepuncture and prescribing. In fact, they felt consultants performed these worse than junior doctors, which is likely true as many consultants do these tasks infrequently and so become deskilled.

James Y5

some consultants are happy and can give really specific advice on your knowledge base and on your examination technique and everything. So I guess that the important thing is to get a bit of feedback from everybody.

Y4 Questionnaire Winter 2015

Consultants, they are not the best people at things like writing up drugs (the worst in fact), many no longer do practical procedures like hang fluids

They valued the input of other professionals, such as nurses, perceiving their feedback on "*personal skills*" such as working in a team, communication and general interactions with patients to be more credible than doctors. They acknowledged that nurses spent longer with individual patients than doctors, observing that doctors spent more time with "*physical tasks such as taking blood*". Nurses had a better idea of what sort of manner patients preferred.

Jim Y5:

> *the patients are the ones who will moan to the nurses if we aren't treating them well. So I think it's important to get feedback from them. I mean obviously you want to be safe, but you also have got to be good with people. It's all very well having medical knowledge, but you have to be able to talk to people correctly, treat them right. And I think the doctors are always able to give you advice on both of those. But the nurses have got better personal skills.*

Linda Y5:

> *it's useful to get feedback from nurses about things like teamwork because that's the whole point of teamwork, it's not just the doctors, it's the doctors and the nurses and the pharmacist and everyone on the team.*

11.5 Clinician availability

During a normal day, a senior clinician such as the consultant or registrar conducts a ward round with junior doctors, then may have a clinic scheduled. Junior doctors remain on the ward to complete jobs from the ward round and are the first point-of-call for nurses. Students, therefore, found junior doctors were more readily available, so were more likely to ask for direct observation, teaching and feedback. Junior doctors had more time to give feedback than senior clinicians.

Linda Y5:

> *They're busier. They, kind of, come in to the ward to do the ward round and they're off, whereas it's the FY1's who are there all the time while you're there*

Y4 Questionnaire Winter 2015

> *The only people who really seemed to have the time and the greatest desire to help out medical students were FY1/2 doctors on the wards. Registrars were often tied up in clinics where they had to see a huge number of patients in a short time*

11.6 High workload of clinicians

Clinician workload was a significant barrier. Clinicians were often felt to be too busy to teach, to observe students performing tasks or to give feedback, especially senior clinicians, so students were reluctant to approach them. This was because they felt bad for asking and "*imposing*" on clinicians, being an "*annoyance*" or "*getting in the way and slowing things down*" when clinicians were already so busy. Not approaching busy senior clinicians was part of the culture in the clinical environment,

with junior doctors and nurses discouraging them from approaching consultants too. When they did approach them for teaching or feedback, they described rejection or being asked to return later.

Sandra Y4:

> *You get a look and they say, well I'm actually really busy now. I don't have time for teaching… It's best if you go away or come back in an hour…That's typical… So, kind of, you feel a bit defeated. So it's just the general feeling I get, you'll be more of an annoyance. So that's why just asking them for feedback, I feel it's additionally wasting their time.*

Linda Y5

> *a lot of people would say, oh, you don't want to bother the consultant because they're so busy but you can't really explain exactly why.*

Clinicians' workload also reduced the time they took to deliver feedback, so it was not always of sufficiently useful quality. If they did get feedback, they felt clinicians were too busy for the student to reattempt the task.

Eilidh Y3:

> *it was just quite, like, vague feedback…it's kind of limited time with consultants because they're in a rush and they don't have a lot of time to fill it out in depth.*

Y3 Questionnaire Winter 2015:

> *More specific feedback can only really be given in the context of multiple attempts and continued practice throughout the module. However, the teaching was so little that feedback on one examination and one history doesn't promote better practice.*

11.7 Negative reactions of clinicians when approached

In addition to rejection or brusque responses from clinicians because they were busy, students also experienced unsuccessful or negative reactions which discouraged further attempts, especially if it took courage to overcome their fear of approaching clinicians initially. Not all clinicians viewed feedback seeking positively, with some describing it as time consuming or inconvenient, using words such as "*nagged*". Sometimes these reactions discouraged further feedback seeking but other times students selected an alternative feedback-giver.

Sue Y5:

I try and pick my moments, because occasionally, you know, you'll you meet someone and you think, well I'm not going to get much out of that person, so I'm going to have to go round the fence and see someone else.

Dr A_Hospital:

I get endlessly, endlessly nagged about feedback, I've been tailgated in various places

11.8 Culture in the hospital environment

11.8.1 Clinicians' professional identity

Hospital clinicians were mainly employed to work as clinicians and provide patient care. Some senior clinicians g*et al*located time to teach but the majority do not, especially junior doctors and nurses, so teaching was not perceived as part of the clinician's role. They therefore prioritised other commitments or interests, such as research or postgraduate teaching. Many students were told by clinicians that they were not paid to teach them and teaching was not part of their job. This discouraged students from approaching these clinicians or seeking feedback from them.

Y3 Questionnaire Winter 2015:

The doctors in rheumatology literally told us that they weren't here to teach us

Y5 Questionnaire Winter 2015:

All staff who have teaching in their contract should be obliged to do it and try to be a bit more friendly and forthcoming!

Sandra Y4:

you get the impression they're not really interested in teaching, so you just don't really bother approaching them… so many patients and they're all so busy that teaching is maybe not their priority.

11.8.2 Entering clinicians' territory

They described the culture of the clinical environment as belonging to doctors and nurses. They were entering their territory, so it was difficult to integrate and feel comfortable if they were not welcomed. Almost all students interviewed described experiencing unwelcoming behaviour, such as not being spoken to, being ignored or what was perceived to be rude, "*volatile*" or "*confrontational*" behaviour. This resulted in a hostile environment for them, with very little learning, inhibiting them from

approaching clinicians for feedback or leaning opportunities. This attitude also impacted on their sense of belonging and integration into the clinical team (section 8.1).

Sally Y5:

> *my consultant would not even literally say hi to us…not say anything…You don't understand what's happening, no one wants to talk to you. You're not going to make an effort to ask. Clearly they're not interested in you being there. So we're going into their environment. They're the ones who've got the advantage of I know what I'm doing, this is how it rolls, they are my rules.*

Jim Y5

> *medicine is full of people, some people are volatile! I'm just not good with handling that kind of confrontation, confrontational people*

Some tried to overcome this barrier through staying late on the wards to see more patients, but still found clinicians difficult to approach. They found this very disheartening.

Jim Y5:

> *You're supposed to be in 9 'til 5 and I was in until 10pm because nobody was helping me, despite asking for help…they couldn't be bothered.*

11.8.3 Nurses against doctors

Students picked up on a feeling of hospital nurses working in separate teams to doctors. Many aspired to work with nurses better when they became a junior doctor, so sought feedback on ways to help them work better with nurses, for example team working skills.

Linda Y5:

> *Nurses and doctors, often they complain about each other but they only do that for lack of understanding about what the other one has to do*

Jim Y5:

> *you do ultimately work as part of a team…sometimes I feel that there is a bit of, actually on most occasions there is a bit of, it's the nurses against the doctors. So I feel that feedback would be good to help us integrate with the nursing team*

11.9 Clinicians' perceptions of approachability

Students commented on how intimidating they often found senior clinicians and clinicians acknowledged this had some truth (see 8.5). Clinicians felt this was due to seniority, their position of authority in the medical school, their reputation with other students and the potential impact their judgement might have on the student's progression. They also appreciated this was how they may come across if they were particularly stressed or thought this was how they were meant to behave.

11.10 Clinicians had mixed views about students seeking feedback

There were mixed feelings about feedback seeking behaviour from clinicians. Some were very positive, some were negative and some were indifferent.

11.10.1 Perceiving feedback seeking as a positive behaviour

Enabled feedback to be more useful and encouraged proactivity

Many clinicians liked students to seek feedback because they felt it made their feedback more useful, more specific to the student and made the clinician more comfortable and confident with delivering feedback. They perceived students who sought feedback as actively taking responsibility for their own learning and allowed clinicians to get an idea about the student's thought processes. Some voiced frustration with students' lack or proactivity and wanted students to seek feedback more, so they would take more responsibility for their own learning and more actively participate in teaching.

Dr D_Hospital:

> *it makes it more personalised rather than you watching them and trying to, you know, work out where the areas are that you think they need to improve. It's being driven more by them and it gives you an idea of whether they've got insight into what areas need to be developed.*

Dr C_Hospital:

> *Most are proactive about asking for help, proactive about seeking out feedback, and not expecting it just to be given to them. I think some of the onus needs to be put on the students about asking for feedback, recording their own feedback, making use of their own feedback…*

Feedback seeking gave permission for honest feedback

Students felt feedback was more valuable if it was honest, but clinicians found honest feedback challenging to give (section 10.4). Some clinicians, including the nurses, felt being asked for feedback

gave them permission to deliver honest feedback so were more likely to give it, especially if they lacked confidence or training in giving feedback.

J_Nurse:

> It's kind of giving you permission to discuss the things that you've noticed about them, whether they're good or challenging

11.10.2   Disliking students seeking feedback

Concerned about only seeking feedback for exams

While many clinicians liked the concept of students seeking feedback, some were resistant. They worried that they would only seek feedback to help pass exams rather than to become a better doctor. They felt students were very "*exam-focussed*" and found it difficult to view feedback as being useful in any other way other than improving exam performance.

Dr B_Hospital:

> There's a discrepancy between the kind of feedback students want and the kind of feedback you give them. The students want the feedback that's going to help them do better on their exams. We're often giving them feedback that is more, sort of, how to be a better junior doctor. And what they really want to do is do better on their exam.

Concerned about only seeking positive feedback

Clinicians also worried that students would only seek feedback when they had performed well. They worried that this "*cherry-picking*" would lead to a falsely positive idea of how well they were performing, so would not realise where they were underperforming, what they needed to work on and unexpectedly fail an exam or not perform adequately as a junior doctor.

Dr A_Hospital:

> I think students who ask for feedback are particularly like to get positive feedback…We're all the same, we want to feel good about ourselves so bad experiences we tend to down play.

Dr E_Hospital:

> there are concerns about the superficiality of the fact that the student chooses what they get feedback…not getting the feedback they need…worried that a false sense of achievement may be delivered by this system.

This contrasts interestingly with students' own accounts of when they sought feedback and why, with many complaining that feedback was "*too nice*" or not honest enough, and wanting more constructive feedback on how to improve (section 8.2). No doubt some students did seek feedback on tasks they performed well, sometimes for reassurance or confidence, but clinicians felt the majority had a PGO.

Credibility of junior doctors as feedback-givers

Some clinicians were strongly averse to very junior doctors (FY level) providing feedback. They felt that feedback would not be useful enough and very junior doctors did not have the skills or knowledge to ascertain if students reached the expected standard.

Dr A_Hospital:

> *I think they are too close to them... most of them won't have enough distance to be able to truly reflect the skill level they require to be an FY1.*

In contrast, students felt feedback from FY doctors was more credible and valuable than from consultants (section 10.4).

11.11 Clinicians' receptivity to feedback seeking

Various staff intrinsic factors influenced clinicians' receptivity to seeking feedback, such as whether clinicians recognised feedback-seeking, if they had confidence and training to deliver feedback and whether they felt they could deliver honest feedback.

11.11.1 Recognising feedback-seeking

Some clinicians felt students did not ask them for feedback, but during interviews they described indirect feedback seeking attempts which they did not view as feedback-seeking. For example, they described showing students different ways of performing clinical skills when asked to, or facilitating students to reflect when students approached them about finding a task difficult and delivering external feedback to them during a reflective discussion. They didn't recognise this as seeking feedback.

J_Nurse:

> *when it's in an informal situation and it's just around doing something differently or better, then I guess I really haven't thought about it. I just see it as me showing them how to do it more effectively.*

Dr K_GP:

> *they often look for it in a less direct way than actually coming out and asking.*

11.11.2 Reluctance to give honest feedback

As described earlier, students found honest feedback more valuable but felt they didn't always receive honest feedback because the feedback giver was being "*too nice*", did not wish to give useful feedback or was not able to provide feedback of sufficient quality.

However, many clinicians described lack of confidence in delivering feedback because they felt they had insufficient training or practise. This discouraged them from giving feedback, especially honest feedback, especially if they viewed themselves more as clinicians than clinicians who teach. When they lacked confidence to deliver constructive feedback, they felt uncomfortable doing it so some just didn't.

Dr F_GP:

> *we're not educationalists, but what we can offer is how general practice runs, how we make the decisions we make…I find it very difficult to write meaningful comments, because it's easy if they're quite good, but actually, to pick out why it's not good is much more difficult…And we don't really get any training*

Dr H_GP:

> *I think giving negative feedback is more difficult and most people aren't terribly happy or comfortable doing that…I think that particularly the practice nurses, possibly some of the partners would feel anxious about giving feedback on something that hadn't gone well.*

One nurse described initially feeling intimidated giving feedback to medical students because she perceived that they had more knowledge than she did. It took experience to overcome this barrier.

L_Nurse:

> *It's just being comfortable with the fact that you don't know everything and probably, in fact not probably, certainly, the person that you are assessing has a greater overall knowledge base than you have but within the skill you're teaching it's just part of what you're helping them with.*

Secondly, many had past distressing experiences of giving honest feedback to learners, resulting in upset. They described these experiences vividly and in depth, finding them extremely distressing themselves, so described "*shying away*" from them. Others experienced being challenged if there was a mismatch between the student's self-assessment and the feedback-giver's assessment of

performance. This was time-consuming for them, when they already had a number of other commitments on their time, so they admitted to sometimes choosing the "*easier*" option which was providing more positive but less honest feedback.

Dr A_Hospital:

> *Well, I think any time you upset a student, I think those are the most distressing…doctors tend to be empathic to do their job well… you just steer away from saying exactly how it is, and giving the feedback you really think the student needs to hear, and you start telling them what they want to hear.*

Dr E_Hospital:

> *it is easier to give good feedback or middle-of-the-road feedback than to give poor feedback…Just that example of that girl who went bananas because she was given a B…that doctor, who had all the hassle, and had her writing to me, and it going to the committee, and all this sort of stuff. If you were that guy, what are you going to do the next time?…So you think to yourself, maybe it's easier just to give a better mark, and then I won't get any hassle. So particularly if being a tutor is ten per cent of your life, the other 90 per cent is hassle enough.*

Thirdly, clinicians felt that, with short placements, they only saw students briefly. If their feedback upset a student, they worried that they could not check if the student coped with it afterwards because they were likely to never see them again. They were also unable to observe the same task again to allow demonstration of improvement.

Dr B_Hospital:

> *You might have really upset the student by saying something quite trivial, and you don't really have the opportunity to sort that out and make them feel better. So the feedback is still correct, and appropriate, but there's a certain lack of honesty*

11.11.3   Environmental factors impacting on clinician receptiveness

Clinician professional identity

Clinicians had other competing priorities, which they found challenging and sometimes overwhelming. They felt they were juggling increasing clinical pressures, unwell patients and clinics and they often did not have time to teach. This was a common in hospital medicine and general practice. They also discussed the negative effects of funding cuts, staff shortages and rota gaps on their ability to teach

students or provide adequate learning opportunities. Some saw students as an additional "*onerous*" burden.

Dr F_GP:

> W*e wouldn't be good at giving tutorials, we don't have the time…the presence of a student alters the dynamics of the surgery, we're doing ten minute appointments, and often there are four or five problems, which you can't actually deal with in ten minutes anyway, so if you then are explaining something to somebody else…it was quite onerous taking a medical student with them.*

Clinicians' professional identity affected how committed they were to teaching and therefore how receptive they were to feedback seeking. Students reported that not all clinicians viewed their role as including teaching so some refused to teach. Some clinicians did not view themselves as educators or consider education to be their job if they were not paid for teaching by the university, so were reluctant to teach. Others viewed teaching as part of their role, but not a significant part, identifying with being a clinician first.

Dr H_GP:

> *When somebody makes a complaint and says your clinical management is rubbish, that's really unnerving and you get very upset because that's what you do, whereas the tutor role is not for most of us your primary role. Your primary role is being a GP and then you do the student tutor as an extra.*

Dr A_Hospital:

> *The university has to have the little bit of weight behind expecting people who are taking the time to teach students to actually deliver that back*

Engaging fellow clinicians despite clinicians' "feedback-fatigue"

SMLs experienced difficulty encouraging other clinicians to engage with teaching and appreciate the importance of feedback. Some described the challenges maintaining teaching requirements set by the medical school while their colleagues prioritised research and clinical commitments over teaching students, so teaching commitments were not evenly distributed throughout the team.

They also observed that, paradoxically, while the University and the medical school put increasing emphasis on improving feedback and providing staff training for feedback, their colleagues felt that giving feedback had been discussed so much that they had developed what they called "*feedback-*

fatigue". Colleagues consequentially developed a resistance, lack of engagement and "*exhaustion*" with anything related to feedback.

Dr B_Hospital:

> *over the last period, feedback has become the buzz-word…It's just what you do, you know, you provide it continuously. I think there is a bit of exhaustion creeping in though, from all this feedback constantly.*

Structure of placements

Clinicians described difficulties coping with the number of students and the short lengths of placements. Many peripheral hospitals also accommodated students from other medical schools, resulting in competition for learning opportunities. Other students could be in different years of their course, so clinicians had to consider the level they were teaching to, which could be confusing.

Dr A_Hospital:

> *they have students from more than one Scottish university, and also different years. So, some places we send our students we have years four and five, and I find that's very difficult to teach those two separate levels.*

Clinicians also found placements were too short to get to know students well enough, allow integration into their clinical team and observe an improvement in performance. Some placements timetabled students in the same firm for 8 weeks, others rotated students through different firms every week.

Dr D_Hospital:

> *they're doing a different thing every week with different people, it's much harder to feel part of the team. I mean, if you're passing through, if you're only there for a day or a few days, it's very difficult.*

11.12 Summary and concept map

In summary, clinician factors influencing students' decision to seek feedback included clinician approachability, credibility depending on feedback they desired, clinician availability and business and their reactions to feedback seeking attempts. It was also influenced by the culture of the clinical environment, with students viewing the hospital as clinicians' territory which they had to be invited into through being welcomed by verbal and non-verbal language. While students perceived senior clinicians to be intimidating as one of the significant barriers to feedback seeking, clinicians viewed

this as the way culture in medicine is and students needed to learn to overcome this intimidation to fit in.

Some clinicians favoured students seeking feedback as a way to make their feedback more useful and give them permission to give honest feedback, overcoming lack of confidence and training, while others worried that students would only seek positive feedback so not develop an understanding of their true performance. Clinicians were more receptive to students' feedback seeking attempts if they felt they had enough confidence and training to deliver useful feedback but still worried about causing distress to the student.

Environmental factors also affected clinicians' receptiveness to seeking feedback. Most did not view teaching as the main part of their job, either because they were not paid to deliver student teaching or did not get time in their job to teach. Many who did have teaching as part of their role still viewed being a clinician as their priority. Even if clinicians wanted to teach, they found it challenging to find the time because they had so many other commitments they had to juggle and not all their colleagues were as committed, so a few clinicians carried most of the teaching burden in each module. They also found it difficult to deliver teaching when placements were short, they had students at different levels.

This concept map summarises clinician factors inhibiting feedback seeking.

Figure 14 Concept map summarising clinician factors inhibiting feedback seeking
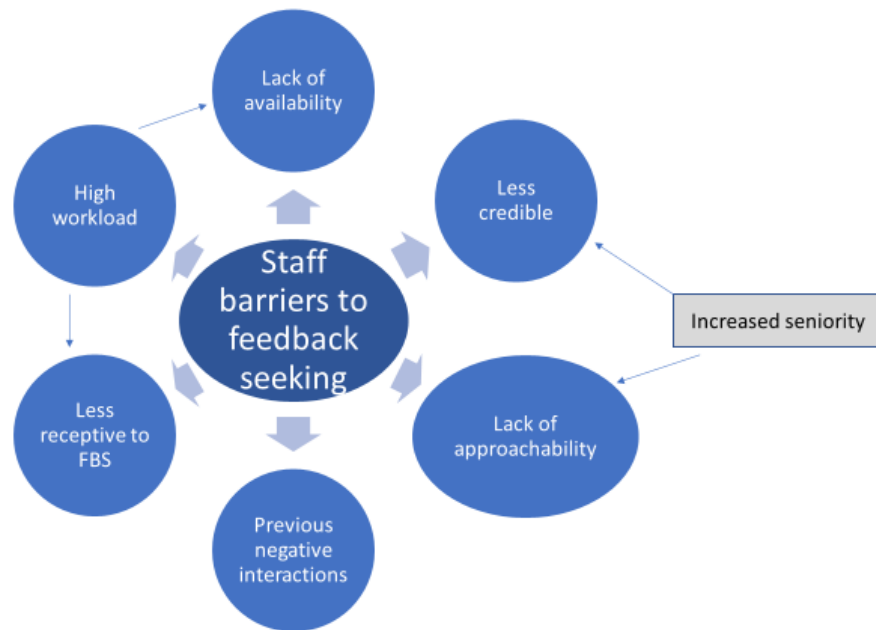
12. How extrinsic factors promote or inhibit feedback-seeking: environmental factors

12.1 Introduction

This section has so far discussed the intrinsic, feedback-related and clinician-related factors which impact on students' decision to seek feedback and clinician receptiveness to feedback seeking attempts. A number of environmental factors were also perceived by students to impact on whether they sought feedback successfully. This chapter will discuss these.

12.2 How teaching is structured

12.2.1 Large student groups

Some teaching sessions in hospitals were delivered in "bedside teaching" format, involving groups of up to 8 students in an interactive tutorial, teaching on a patient. Large student groups meant they felt they had to compete with each other to get individual feedback and received less feedback than smaller groups. They also did not want to disadvantage colleagues by taking up all the teaching clinician's attention by asking for feedback, so their colleagues received less feedback.

Eilidh Y3:

> when you're in a bedside teaching group of like six and everyone's getting, trying
> to get in and examine the patient and I just kind of struggled a wee bit.

In some specialties, such as obstetrics, they also competed with students in other professions, for example midwifery students. Medical students needed to deliver one baby but midwifery students need to deliver a large number to qualify, so they competed to deliver the same babies.

12.2.2 Different year groups on placement

Like clinicians, students felt disadvantaged in placements with students from other years or other universities. They did not always get teaching at the level they were at or were compared to the standard they should be. Senior students found being compared to junior students unhelpful, while junior students found being compared to senior students unfair.

Rachel Y5:

Staff often get so confused between who is a 3ʳᵈ year and who us a 5ᵗʰ year, and there is a massive difference… if the 3ʳᵈ years are being given feedback for 5ᵗʰ years, it's not fair and it's also not constructive because it's not helping them with what they need to know right now. And I think that can be a bit off-putting. But equally as a 5ᵗʰ year, what you need to know is different to a 3ʳᵈ year so there's no point someone being, like, oh yeah it's good that you know that! When actually you need to know a lot more than that!

12.2.3 Cancelled teaching sessions

Many felt they had insufficient formal timetabled teaching sessions, such as bedside teaching, especially if sessions were cancelled. This was their opportunity to have a dedicated clinician allocated to observe them and set aside time to teach, so they could get direct observation easily. When these sessions were cancelled, students had to overcome barriers previously described, such as clinicians' workload and unavailability, to find a clinicians to observe and give feedback.

Questionnaire Winter 2015 Y4

Urology- most teaching was cancelled, bedside teaching atmosphere did not encourage us to ask for feedback. Renal- again, teaching opportunities where I was supposed to get the opportunity to practice/demonstrate a skill that I could ask for feedback on were sometimes cancelled

12.3 The clinical environment

Unpredictability of the clinical environment, such as patients unexpectedly deteriorating or being asked to perform a task they did not expect, is discussed in 8.2, along with worry about what the patient might think of feedback seeking attempts.

12.4 Structure of the medical school

When students tried to seek feedback in writing, they felt there were too many people to contact, which could be time-consuming. They felt the time-consuming aspects outweighed the benefit. They also lacked faith in the medical school's ability to identify struggling students and felt it helping support them was not a priority. Previous unsuccessful feedback seeking attempts, even in another situation such as for exams, made them reluctant to seek feedback in other situations such as the workplace.

Darcy Y5:

I know other people go well it's not the priority. But I think it is important. Because if somebody hits 5 years and its looking like they are going to fail their finals with problems that should have been picked up a couple of years ago, I feel that really is a failing. If I did, god forbid, fail, yes it will be picked up at that point but someone should have addressed if I did have an issue earlier.

12.5 Concept map summarising environmental barriers to seeking feedback

This chapter has explored the environmental factors students encounter when wanting to seek feedback. Feedback seeking behaviour is inhibited by larger student groups containing students at different levels, fewer formal timetabled sessions with clinicians allocated to them and coping with the unpredictability of the clinical environment. The environmental factors influencing feedback seeking behaviour are summarised in the concept map below.

Figure 15 Concept map summarising the environmental barriers to feedback seeking

While some of these variables can be addressed, such as staff training to deliver teaching to students at different levels, other factors are unchangeable, such as the nature of the clinical environment. In fact, it could be argued that part of our role as a medical school is to enable students to cope with this unpredictability in preparation for their role as a junior doctor, when they will be exposed to it for much longer periods. If students find it challenging to learn in such an environment then we need to explore how we can enable them to acquire these skills better.

13. Discussion: How does feedback seeking behaviour develop as students progress?

13.1 Introduction

> **Section 1**
>
> Feedback improves learning and performance
>
> Learners (including students at EMS) feel they do not get enough feedback
>
> There are a number of challenges with receiving and giving effective feedback
>
> Feedback-seeking can help overcome these feedback challenges
>
> Despite this, students do not often seek feedback, with junior students seeking less feedback than senior students

> **Overall Research Question:**
>
> How can we promote development of feedback-seeking behaviour?

> **Section 2**
>
> The influences of FBSB in medical education are poorly understood
>
> There are few high quality studies supporting any interventions having an impact on FBSB

> Aim: To develop an understanding of the influences of feedback-seeking in undergraduate medical education and how we can promote it.
>
> 1.1. To explore what motivates learners to seek feedback in the clinical environment and explore the barriers that inhibit feedback-seeking behaviour
>
> 2.2. To explore if a formative WPBA tool can help learners overcome the barriers to feedback-seeking described in the first aim.

> **Section 3**
>
> Charmazian Grounded Theory study using data from staff and student interviews and questionnaires and minutes of staff meetings

> **Section 4**
>
> FBSB is influences by intrinsic, extrinsic (staff and environmental) and feedback factors

> **This section: How does FBSB develop as students progress?**

This chapter discusses the results of the first aim in more detail and provides a final summary to integrate my findings from the previous chapters.

13.2 How students develop feedback-seeking behaviour

Previous research (Murdoch-Eaton and Sargeant, 2012; Ramani *et al*., 2018), suggests feedback seeking increases as learners mature and progress through their course, and the results of my preliminary questionnaire (Figure 5) echo these findings (chapter 3). Given the importance of seeking feedback, we therefore need to consider how learners develop the skills to overcome barriers and seek feedback so that we, as an educational organisation, can consider how to promote this earlier.

A number of factors influence students' ability to overcome the barriers described in the previous chapters.

Firstly, students who experienced successfully seeking useful feedback were more likely to seek feedback in future because previous experiences demonstrated seeking feedback was beneficial, so the benefits outweighed costs (see 8.5). They also became less fearful of approaching clinicians to seek feedback by realising it was not as daunting as they thought.

Linda Y5:

> *people were a bit apprehensive about it in the start because it's a bit awkward…but then once you get over that, it actually helped*

Secondly, they developed successful strategies for approaching clinicians and so were less likely to be dismissed, by demonstrating they were keen to learn and be present on the wards. They also learnt to consider when best to approach someone for the best chance of success, or to seek alternative people and learning opportunities if they were initially unsuccessful. These successes increased confidence.

Steve Y5:

> *I try and pick my moments because occasionally, you know, occasionally you'll you meet someone and you think, well I'm not going to get much out of that person, so I'm going to have to go round the fence and see someone else.*

They also developed ways of coping with abrupt, abrasive and brusque behaviour from clinicians they approached (see 11.6), becoming desensitised as it no longer upset them so much.

Annabel Y5:

> *I was still a sensitive person, but I grew over the years, I kind of got stronger, and I understand, no, it's like so you don't have to get upset over every single thing someone says.*

As students progressed, they learnt how to integrate into clinical teams by being useful, so developing a better sense of belonging. They also became more familiar with the clinical environment as they were more exposed to it, so were less intimated and got used to feeling out of place like they did not belong or were "*in the way*". Clinicians also noticed that students developed more confidence, even when observing them over a year, which helped them trust students more.

Lisa Y4:

> *I don't know if now I feel less in the way, or you just, you've got used to that sort of feeling that you don't really know what's going on and you're always in someone's way.*

Dr D_Hospital:

> *They tend to become a lot more confident… You know, they're very green at the beginning of year 5 and then they're becoming more like young doctors than medical students.*

They also became competent at tasks so could help with jobs, such as venepuncture, which increased their usefulness and helped them act more autonomously. Senior students could perform more tasks with increasingly minimal supervision, such as writing discharge letters. This increased the opportunity they had to seek feedback.

Sally Y5:

> *in 5th year you very much, you'll be given jobs to do and you'll be expected to write discharge letters, do bloods, put in venflons…it means that you feel like you're part of the team. And you get more feedback because everyone knows who you are…you can't get feedback for sitting there and listening*

As students progressed, they described developing a better idea of what their learning needs were, so were more likely to seek feedback on areas they wanted to improve.

Sandra Y4:

> *I think now that we're going more through the years, I'm more confident to ask specifically in things that I think I need to improve or I want to get practice on,*

'cause I know…in a way, I know what I want and what I need, which wasn't the case last year.

13.3 Concept map describing how students develop feedback seeking behaviour

In summary, students develop feedback seeking behaviour because they developed more successful strategies to approach clinicians, developed coping strategies to deal with negative feedback and clinicians' abruptness, developed increased competence and became more integrated into the clinical environment, became more aware of learning needs and perceived more value in seeking feedback based on previous experiences. This is summarised in this concept map below.

Figure 16 Concept map summarising how students develop feedback seeking behaviour as they progress
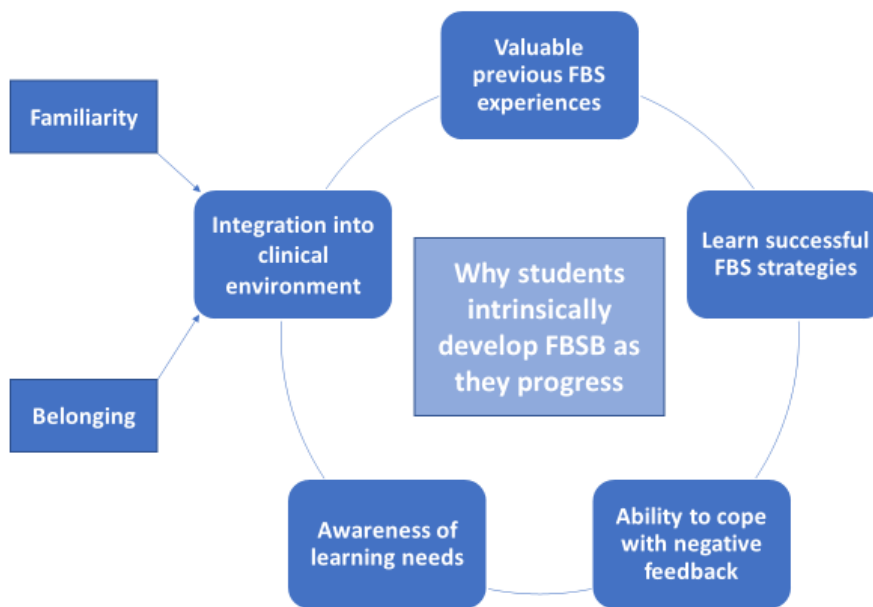
13.4 Final Summary and concept map

I have discussed the intrinsic, extrinsic and feedback factors influencing feedback seeking, summarised in the theoretical map below. This map shows that feedback seeking can be increased by students being more proactive and more self-regulated, perceiving that feedback sought has more perceived benefits than costs, increased opportunity to seek feedback and having sufficient confidence to overcome their fears of negative feedback, clinicians and the clinical environment. Confidence is increased by an increased sense of belonging, having previous positive experiences and generally

being older and more experienced. Staff and environmental factors also influence feelings of confidence and how much opportunity learners have to attempt tasks to seek feedback.

How this adds to current knowledge will be discussed chapter 21.

Figure 17 Theoretical map: the intrinsic, extrinsic and feedback factors which influence feedback seeking behaviour
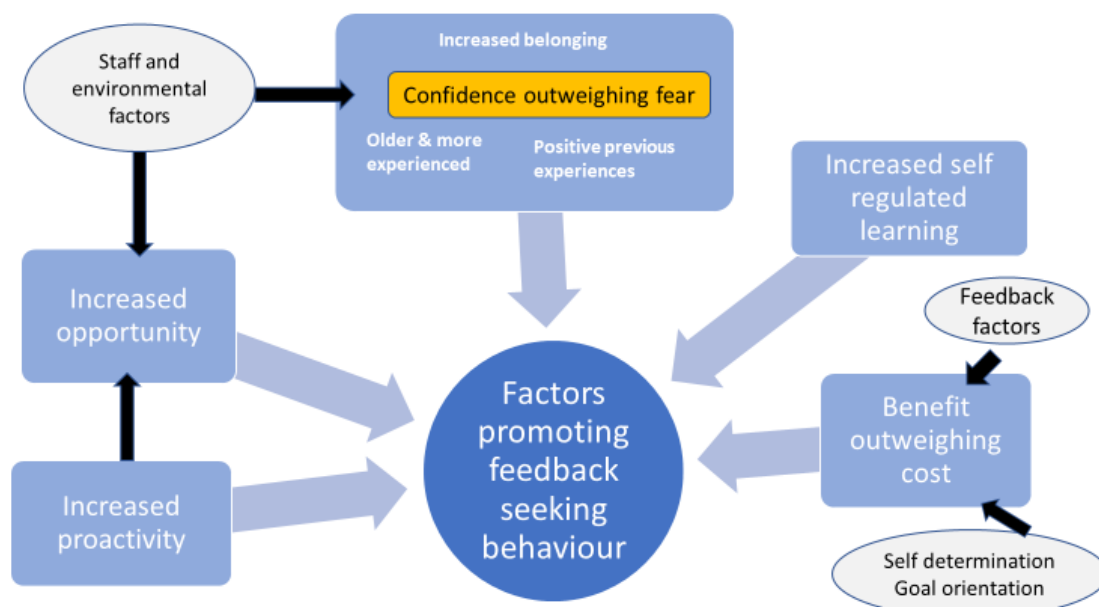
13.5 Conclusion

This chapter has summarised the intrinsic, extrinsic and feedback factors which influence feedback-seeking, including how feedback-seeking develops as learners mature. It is important to consider how we, as a medical school, can promote earlier development of feedback seeking behaviour and maximise learning. As discussed in section 2, there is no high-quality evidence exploring the impact of any intervention on feedback seeking behaviour, although many studies used WPBA as either a measure of feedback seeking behaviour or of motivation. As EMS wished to move from summative to formative WPBA, as outlined in section 1, this was something I developed so I could explore its impact on feedback seeking behaviour. The next two sections will describe the design and implementation of such a tool and whether it can help students overcome the barriers described.

Section 5

Designing, developing, implementing and evaluating a formative feedback tool

14. Outline and aims of this section

14.1 Introduction

> **Section 1**
>
> Feedback improves learning and performance
>
> Learners (including students at EMS) feel they do not get enough feedback
>
> There are a number of challenges with receiving and giving effective feedback
>
> Feedback-seeking can help overcome these feedback challenges
>
> Despite this, students do not often seek feedback, with junior students seeking less feedback than senior students

> **Overall Research Question:**
>
> How can we promote development of feedback-seeking behaviour?

> **Section 2**
>
> The influences of FBSB in medical education are poorly understood
>
> There are few high quality studies supporting any interventions having an impact on FBSB

> **Aim:** To develop an understanding of the influences of feedback-seeking in undergraduate medical education and how we can promote it.
>
> 1.1. To explore what motivates learners to seek feedback in the clinical environment and explore the barriers that inhibit feedback-seeking behaviour
>
> 2.2. To explore if a formative WPBA tool can help learners overcome the barriers to feedback-seeking described in the first aim.

> **Section 3**
>
> Charmazian Grounded Theory study using data from staff and student interviews and questionnaires and minutes of staff meetings

> **Section 4**
>
> FBSB is influences by intrinsic, extrinsic (staff and environmental) and feedback enablers and barriers

> **This section: Designing, developing, implementing and evaluating a formative feedback tool in order to explore its impact on FBSB**

The previous sections have discussed the importance of feedback-seeking and the intrinsic, extrinsic and feedback-related promoters and barriers to seeking feedback. As part of this project, I designed,

developed and implemented a formative workplace-based assessment tool to explore its impact on the barriers to seeking feedback described in section 4.

This section describes how I designed, developed and implemented a feedback tool, the Feedback Postcards (FPs). The aims of the FPs were to:

- Enable students to proactively seek feedback in the clinical environment
- Have a form of written feedback to remember feedback received
- Enable reflection at a later date
- Allow students to build up a picture of their progress throughout the year.

I will describe how the tool was designed and revised through the pre-pilot, pilot and full roll-out development cycles. In the full roll-out cycle, I implemented it in 6 NHS trusts across Scotland. They were used by 790 students in years 3, 4 and 5 of the MBChB course and over 1000 clinicians. This generated over 20,300 FPs. The chapters in this section outlines the changes implemented and the results of evaluations. Section 6 will discuss the impact of the tool on feedback seeking behaviour.

14.2 Note on authorship

I led on the design, development and implementation of the FPs. As noted in section 1, any changes to the School's assessment strategies must be approved by a number of committees. Due to the high stakes nature of the changes proposed, they were discussed with my supervisors (HSC and DH) and were approved by Programme Committee before implementation. Other smaller changes were approved by module organisers (MOs) and year committees, sometimes with recommendations for changes, before implementation.

I initially performed all administrative work myself. Once the project expanded into the pilot study, due to the increasingly large scale of the project, my supervisors and I interviewed and employed an administrator to produce the FPs on the template I designed. I wrote training materials for this (standard operating procedure in appendix).

The technical aspects of this design, including use of the barcode, QR code and mail-merging software, had already been trialled and implemented for use on another project conducted by the Assessment and Feedback Team.

14.3 Basis of this intervention

While there are over 50 types of WPBA designs used in medical education, few have been thoroughly evaluated (Kogan *et al*., 2009). Of the tools with evidence for validity, such as miniCEXs, DOPS and CBDs which we had previously used, there is no clear evidence that they lead to improved learner

performance (Miller and Archer, 2010). More important than validity is how the tool is used (Boursicot *et al*., 2021). However, the challenge with evaluating use of different tools is that there are so many variations in implementation, rater training and uses (including the same tools being used summatively and formatively). In many cases when WPBAs are implemented, there is little or no rater training delivered (Miller and Archer, 2010), impacting on how reliably raters used the tools. Other studies have found current WPBA tools are viewed negatively by learners, who view them as "bureaucratic", reducing morale and motivation, lacking in credibility and perceive raters lacking in honesty (Barrett *et al*., 2017; Bindal *et al*., 2011; Pereira and Dean, 2009; Sabey and Harris, 2011). In summary, despite there being so many WPBA designs, there is no clear evidence that one is more superior to the others in terms of validity, reliability, acceptability or educational impact.

The feedback postcards were therefore developed using a pragmatic approach rather than adopting an existing tool, with features in the design drawing on educational theory or implemented to improve usability. The previous workplace based assessment tools were summative and had low acceptance with students and clinicians. There were also a number of different summative WPBA designs used, which students found confusing. The FPs aimed to directly replace the existing models with a single, much simpler design.

Section 4 has described the enablers and barriers of feedback-seeking based on data from the first part of my research. We hoped to overcome some of these barriers through the introduction of the FPs as follows:

Cost of feedback-seeking: section 10 describes how worries about receiving negative summative feedback impacted on their decision to seek feedback and reduced the educational impact of the feedback received, preferring formative feedback. Clinicians also found it difficult to deliver feedback telling students they had failed. The FPs were therefore originally intended to be entirely formative when they were implemented, to reduce the perceived cost of feedback seeking. There is much in the literature about the benefits of formative feedback and WPBAs to contribute towards learning, rather than summatively assessing learning (Barrett *et al*., 2017; Bindal *et al*., 2011; Boursicot *et al*., 2021; Massie and Ali, 2016; Norcini and Burch, 2007).

Age and experience: Students feedback-seeking increased as they progressed through the course (section 8.4, (Murdoch-Eaton and Sargeant, 2012), so through early implementation we hoped to allow them to develop the confidence and experience to seek feedback and further increase feedback-seeking by final year.

Confidence to seek feedback and development of feedback seeking strategies: section 8.3 described how students' lack of confidence was a barrier to approaching clinicians for feedback and 8.4 described students' development of successful feedback-seeking strategies increased feedback seeking. We hoped the use of a formative tool would give more confidence to seek feedback and the tool could be used as a strategy to seek feedback, overcoming these barriers.

Fear of feedback seeking: section 8.2 described fear of clinicians, particularly senior clinicians, inhibiting feedback seeking. Originally students were able to select when they seek feedback, on what and from whom to encourage feedback-seeking from clinicians they were less fearful of and found most approachable and available (as described as a barrier in section 11). However, in order for the tool to be acceptable to module leads, they specified students seek feedback from a set number of consultants, who they unfortunately feared the most.

Self-regulated learning: section 8.6 described students seeking feedback to develop the forethought phase of self-regulation. By allowing students to choose which tasks to seek feedback on, we hoped to encourage them consider what their learning goals were and to use the FPs to seek feedback to achieve these goals.

14.4 Project aims

The overall aim of the FPs was to enable seeking feedback. Given the general dissatisfaction with feedback and ratings in the National Student Survey (section 1), the FPs aimed to allow us to:

a) Move towards a formative WPBA tools

Previous WPBAs were summative (mini-CEXs and DOPS). Internal work and comments in the NSS indicated students felt summative WPBAs hindered learning. The benefits of a formative over a summative WPBA tool has been well-described. Due to word-count restrictions, I will not discuss this in detail.

b) Enable recognition that they are receiving feedback

As described in section 1, students don't always recognise they are receiving feedback. I hoped the FPs would make feedback easier to identify.

c) Produce a tool to record feedback

In the NSS, students discussed wanting more written feedback. By recording feedback conversations, I also hoped students were more likely to remember them and so be able to act on them.

d) Develop a feedback "portfolio" of multiple FPs, to allow students to monitor their own progress

The next three chapters describe the three development cycles; the Prepilot Cycle (Spring 2014), the Pilot Cycle (Academic Year 2014-5) and the Full Roll Out Cycle (Academic year 2015-6). While this strand of the project ran in parallel to the first strand, I have placed this section second for more logical reading. The implications of running this strand in parallel on the success of the tool will be discussed in the discussion chapter.

Figure 18 Designing, developing and implementing the FPs: the 3 development cycles
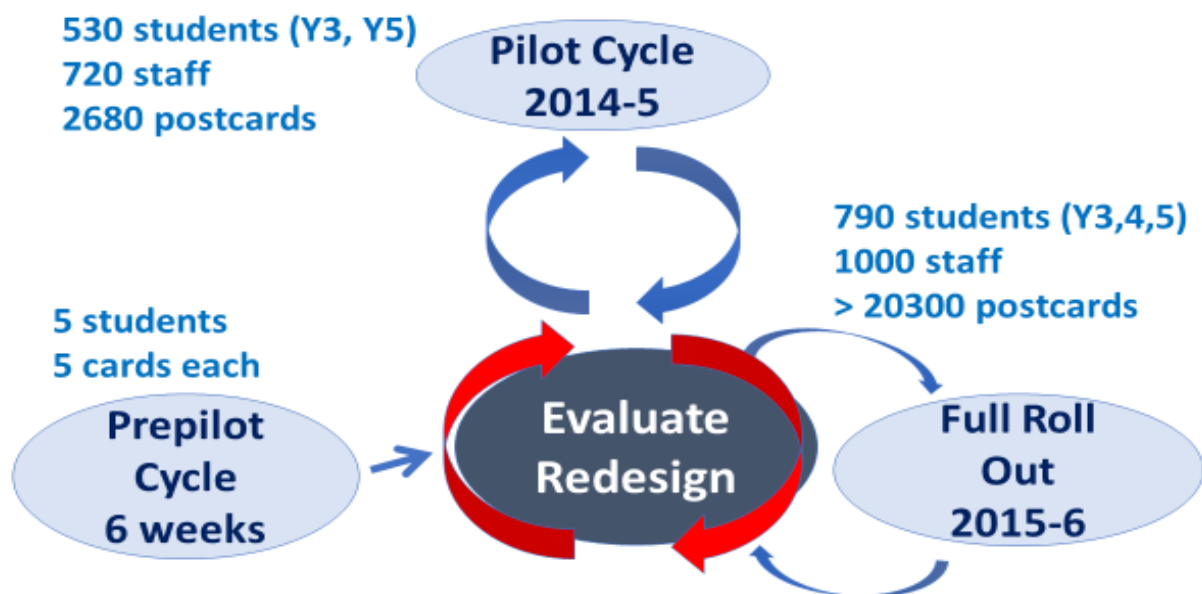
15. The Prepilot Cycle

15.1 Introduction

This chapter is the first of three chapters describing how I designed and implemented the FPs. I will then discuss the results of evaluations conducted and whether the FPs met the overarching aim of the FPs, which was to promote feedback seeking and help overcome barriers to feedback seeking.

The factors which promote and inhibit seeking feedback are described in the previous chapters in this thesis and figure 19 summarises factors which increase feedback seeking (repeated below for ease).
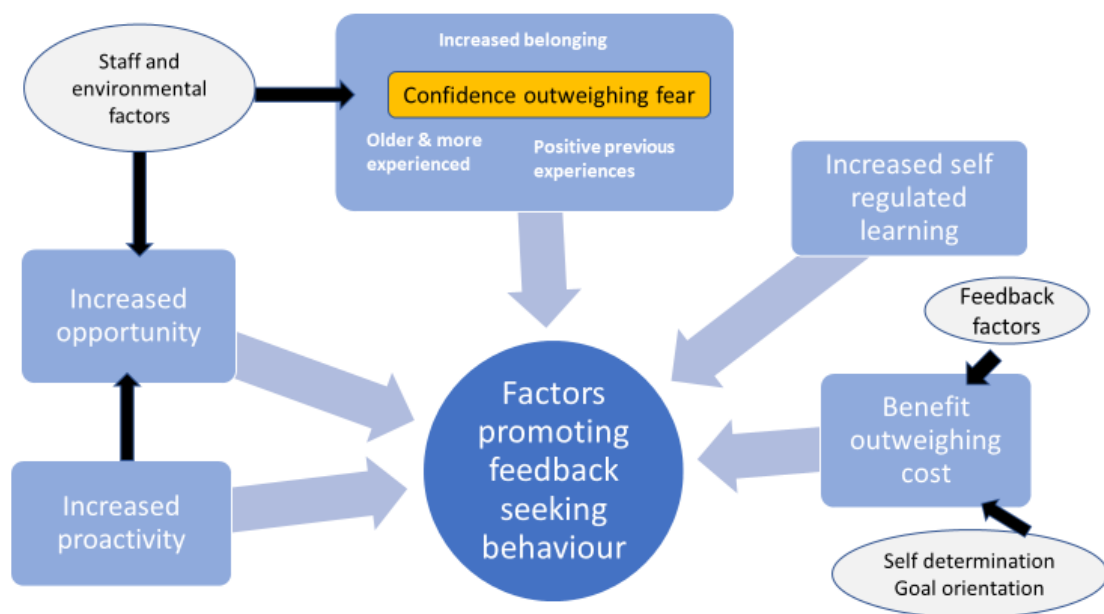
This chapter describes the aims of the prepilot cycle, provide rationale for the original design, describe how I tested this model and describe the key points from the evaluation of this cycle, which influenced changes made before the next cycle was implemented.

15.2 Aims of the prepilot cycle

The overarching aim of the FPs was to promote feedback seeking behaviour in clinical attachments and help overcome barriers to seeking feedback previously described.

The aims of the first cycle, the prepilot cycle, were to:

- Establish an initial FP design
- Scope the usability and acceptability of the FPs from clinicians' and students' viewpoints
- Trial software usability

15.3 Initial FP model

The table below outlines the rationale for the design features used in this model and figure 21 displays the prepilot FP design tested in this cycle. This card was called Card A. A Project FP (Card B) was used in parallel to allow clinicians to give feedback for the project. These are shown below.

Table 3 Rationale for design features for FP used in the prepilot cycle

DESIGN FEATURE	RATIONALE
Coloured photo of student	Decrease students' feelings of anonymity during rotations and help clinicians recognise them.
Barcode above student's ID number	Once returned, the FPs were scanned in batches and a software package converted the barcode to students' email addresses, so they could be returned by email. This saved administrative time, students' time as they did not need to collect them and cost of photocopying.
Separate boxes for what (the task), where (ward or GP surgery) and when (date)	To increase legibility and put the feedback into context when the student reviews the card later
Blank space for feedback	Aimed to promote freestyle recording of brief narrative comments and give clinicians autonomy of what to write
Clinician's signature	To formalise the process and promote accountability for the person delivering feedback, encouraging direct observation of the task.
Clinician's GMC number	To identify who students seek feedback from, as signatures are rarely legible.
Instructions on the back of the FP	Aimed to be informal and brief
Smaller than A5	Small enough to carry in a handbag or pocket. Not too intimidating for clinicians who are struggling for time to complete them
Thick card	Robust enough to last the entire attachment
No grades	Intended for formative purposes

Figure 19 "Card A": Feedback Postcard used in the prepilot cycle

Coloured photo of student

This is a text box for barcode to go in

Student ID number

Name:

What did you do?

Where? | When?

Feedback

Signature: | GMC No:

Instructions

These cards are for teacher feedback on student performance.
There's fuller info and contact details at: bit.ly/edmedfeedback

FEEDBACK RECIPIENT (details overleaf)
Fill in what you did, place and time then give this to whoever is giving you feedback.

FEEDBACK GIVER
Write what you think, good and bad.
Consider the following points:
- What did they do well?
- How could they have done better?
- If this was their next assessment (e.g. OSCE, Finals), how would they have done?
- Any other comments?

Please be realistic and constructive!

Finally post it in the internal mail to:
    Michelle Arora (Feedback Cards)
    Centre for Medical Education
    Chancellor's Building, Little France

Cards will be scanned and you will be able to see all feedback that you have given or received.

Figure 20 "Card B": Project Feedback Postcard used in the prepilot cycle

Please contact me on michelle.arora@ed.ac.uk if you have any further comments.

For the tutor to complete

What did you do?

Where? | When?

What do you think of this way of giving feedback?

Signature: | GMC No:

Feedback Cards Project

This project is intended to permanently record feedback received so students can reflect on it at a later date.

As you know, we are currently striving to improve feedback for our students. You have been given this card as part of our student-led feedback initiative.

Please provide brief feedback on any aspect of the student's performance during any educational activity, for example:
- bedside teaching sessions
- outpatient clinics
- tutorials
- presenting a patient
- engaging during a ward round

Students are expected to complete 6 feedback cards over a period of 2 weeks.

Please also complete the feedback box on the other side of this card to let us know what you think of this way of giving feedback.

Thank you.

15.4 Design of the FPs

The following design features were influenced by educational theory:

Photograph: Students with increased sense of belonging were more likely to proactively seek tasks and seek feedback (section 9). The inclusion of a coloured photograph aimed to improve students' sense of belonging (and hence improve self-determination (Ryan and Deci, 2000b)) as clinicians found it easier to recognise students.

Minimum number to be completed: We had intended for students to complete multiple FPs during each placements. This would allow students to gather information on how their learning had progressed and what they need to continue to focus on (hence improving self-regulation as described in section 8.6), and improve the validity of the tool (Govaerts and van der Vleuten, 2013; Hodges, 2013). Ideally we would have liked there to be no minimum number of FPs required for completion to make this tool truly formative. The difficulty with this is that students who were underperforming or were not as engaged were less likely to complete FPs but this was the group who needed feedback the most. Furthermore, every specialty has its own priorities about what was important to assess (Boursicot *et al*., 2021) and therefore how many FPs module leads would find were acceptable for their module. They also wished to specify which tasks were essential to complete to pass the module.

Global assessment statement: Many WPBAs, such as mini-CEX, include scales designed to demonstrate improvement in development. However, scales contribute to learners' negative perceptions of WPBAs and while assessors may agree on a learner's performance, they interpret scales differently (Beard *et al*., 2011; Crossley and Jolly, 2012). We wished to continue using grading in the FP as this improves self-assessment and helps the learner stay on track with their progress, especially if compared to the standard of a newly qualified junior doctor (Lefroy *et al*., 2017). We therefore used a global summary scale, which has been shown to improve reliability and makes the tool more discriminatory (Beard *et al*., 2011; Crossley and Jolly, 2012). The global assessment statement in final year encouraged comparison with a newly qualified doctor, while earlier years encouraged comparison with the level expected at the end of the year as they were not expected to be at the level of a newly qualified doctor at this stage.

Advantages of paper over online forms

Learners and trainers can find an electronic platform to be usable, time-effective and practical if well designed. They are less space-consuming than paper-based portfolios and there is less risk of evidence being misplaced (Van Tartwijk and Driessen, 2009). They can also be used by multiple assessors and in general are felt to be more usable and legible (Fung *et al*., 2000; Lawson *et al*., 2004).

However, while they can appear to be more user-friendly, there is no definite high quality evidence that they promote learning (Cook, 2005) and the quality of feedback no better than on paper-based tools (Driessen *et al*., 2007). In fact they may even hinder learning, resulting in learners losing faith and resorting to paper-based versions of online forms (Pereira and Dean, 2009). Medical or nursing clinicians may dislike information on screens and prefer to print it out (Van Tartwijk and Driessen, 2009), they may delay or refuse to complete them if they do not understand them or do not have a password (Bindal *et al*., 2011, Pereira and Dean, 2009), or struggle to locate a computer not in use for patient care and is in a private area. Maintaining and updating an online platform takes specific skills and expertise. Some software companies provide that expertise at a significant cost and take time to implement individualised changes. Furthermore, as a trainee, I have experienced difficulties with firewalls on NHS trust computers, systems crashing nationally during supervision meetings and confidential information about one trainee accidentally being uploaded to every trainee in Scotland.

Due to the cost (money, time, personnel and risk of loss of user engagement) of implementing an online tool, along with insufficient evidence to support its benefits outweighing these costs, I opted to start with a paper-based form with the option of an online form if successful.

15.5 Sample

Student volunteers were recruited to the prepilot version. As the aims of this cycle were to establish an initial design, scope the usability and acceptability of this tool and trial the software, I did not plan to obtain a representative sample. The five students (one in year 3, one in year 4, and three in year 5) were recruited through two emails and two postings on the online notice board. A combination of male, female, local and international students were recruited. The FPs were trialled in hospital and GP placements over four weeks.

15.6 Life of a card in the prepilot cycle

The diagram below shows the processes the prepilot Feedback Postcards went through, from making them to returning them.

Figure 21 The life cycle of a prepilot feedback postcard

```
┌─────────────────────────────────────────────────────────────┐
│  Mailmerge photographs, names  and matriculation numbers onto FP │
│                          template                            │
└─────────────────────────────────────────────────────────────┘
                              ↓
┌─────────────────────────────────────────────────────────────┐
│      Email mailmerged FPs to printer. Printing and cutting   │
└─────────────────────────────────────────────────────────────┘
                              ↓
┌─────────────────────────────────────────────────────────────┐
│        Assemble packs (student FP, card B and envelopes)     │
└─────────────────────────────────────────────────────────────┘
                              ↓
┌─────────────────────────────────────────────────────────────┐
│                    Distribute to students                    │
└─────────────────────────────────────────────────────────────┘
                              ↓
┌─────────────────────────────────────────────────────────────┐
│       Student selects who, when and where to seek feedback   │
└─────────────────────────────────────────────────────────────┘
                              ↓
┌─────────────────────────────────────────────────────────────┐
│                  Tutor records feedback on FP                │
└─────────────────────────────────────────────────────────────┘
                              ↓
┌─────────────────────────────────────────────────────────────┐
│  Student returns FP to medical school (internal mail or postboxes at peripheral │
│                            sites)                            │
└─────────────────────────────────────────────────────────────┘
                              ↓
┌─────────────────────────────────────────────────────────────┐
│  I evaluate no of cards completed, review quality and quantity of feedback and │
│              check for unprofessional comments               │
└─────────────────────────────────────────────────────────────┘
                              ↓
┌─────────────────────────────────────────────────────────────┐
│        FPs are scanned and copies emailed to students        │
└─────────────────────────────────────────────────────────────┘
```

15.7 Methods

The 5 students were given 6 FPs (Card A) each, to seek and record feedback over a 4 week GP or hospital attachment. They received a second card (Card B) for the feedback-giver to record feedback on the FP Project. Students were asked to request feedback on whatever tasks they wished. Completed cards were returned for scanning and email copies returned to students.

I met students at the start to obtain written consent, and interviewed them afterwards to evaluate:

- practicalities
- quantity and quality of feedback
- usefulness
- barriers
- suggestions for improvement

Three students met in person for the interview, one could only respond by email and one was lost to follow up despite three email reminders. I did not audio-record these interviews but wrote detailed field notes. Interviews lasted 45-60 minutes.

Clinician feedback written on the Project FP was collated for thematic analysis.

I also examined the number of cards returned and legibility of feedback.

15.8 Results

Aim 1: Trialling the initial design

a) Number of FPs returned

The volunteers could be assumed to be proactive and engaged as they volunteered to participate. However, they still found it challenging to complete 6 FPs over 4 weeks. One student returned only one completed card, which was posted by her tutor. Two fifth year students returned 5 cards and 6 cards. One student elected not to use the FPs because she felt they duplicated the logbook system already in place. The year 3 student did not return any cards and was lost to follow up.

b) Feedback recorded

All cards recorded positive feedback. Only one returned card contained negative feedback and none commented on how to improve. Students suggested structuring the blank space for feedback to encourage more constructive feedback.

Most of the FPs were handwritten by clinicians. One student wrote a summary of verbal feedback received himself as his tutor did not have time to complete it. He reported this was more legible.

Aim 2: Usability and acceptability of the FPs

a) Experiences of approaching clinicians

The three students who had completed FPs described variable experiences. One received his completed FP during an interactive feedback session, another had to chase his tutor for several weeks and the third student's FP was completed by her tutor without her knowledge and posted back to me.

Only one student asked a nurse and phlebotomist to complete his FPs, but the other students felt getting FPs completed by other health professionals would be useful.

b) Usefulness

All 3 students felt the FPs could be useful in enabling students to obtain and record more feedback and the student who did not used them due to duplication wanted to use them on her next attachment. They liked the concept of reviewing the feedback later to chart progress. However, the student who had difficulty receiving his FP back immediately felt the delay reduced the usefulness of

the feedback because he could no longer remember the task. One student was indifferent to the FPs because she felt it should be her responsibility to record feedback received.

c) Clinicians' views

The majority of clinicians' comments described this as a useful way for students to get feedback. However, one felt they had insufficient training in giving feedback and lacked confidence in using the FPs. Another felt the written feedback was repetition of the verbal feedback given so was not useful for students.

Aim 3: Usability of the software used

The cards were robust enough to withstand being carried around by students. Despite some FPs being battered or stained with food, the barcodes were still readable. Completed FPs could be returned to students by email.

15.9 Conclusion

Evaluations from the prepilot cycle indicated that the FPs were positively received by the majority of clinicians and students, although this cycle was not deigned to draw firm conclusions about usability, acceptability and engagement. Furthermore, the students recruited were volunteers, therefore more proactive and so more likely to engage with a new innovation.

Clinicians tended to give positive comments while students wanted more constructive feedback, so they suggested adding more structure to the feedback space. They also valued receiving feedback from other health professionals.

The software and barcode system worked well.

With this in mind, I proceeded to the second developmental cycle: the pilot cycle. The next chapter will discuss the changes made during this cycle.

16. The Pilot Cycle

16.1 Introduction

This chapter describes the second cycle, the pilot cycle, and follows on from the results of the prepilot cycle described in the previous chapter.

The prepilot cycle demonstrated the usability of the software I planned to use to process the FPs, but highlighted a number of issues with the design of the FPs and how they were used:

- Not all FPs were completed immediately or accompanied a feedback conversation
- Many clinicians did not give constructive feedback, which students wanted
- Students wanted to seek feedback from other health professionals
- Some attachments already had WPBA systems, which students did not want to duplicate

This chapter will describe how I tried to address these issues in the second cycle.
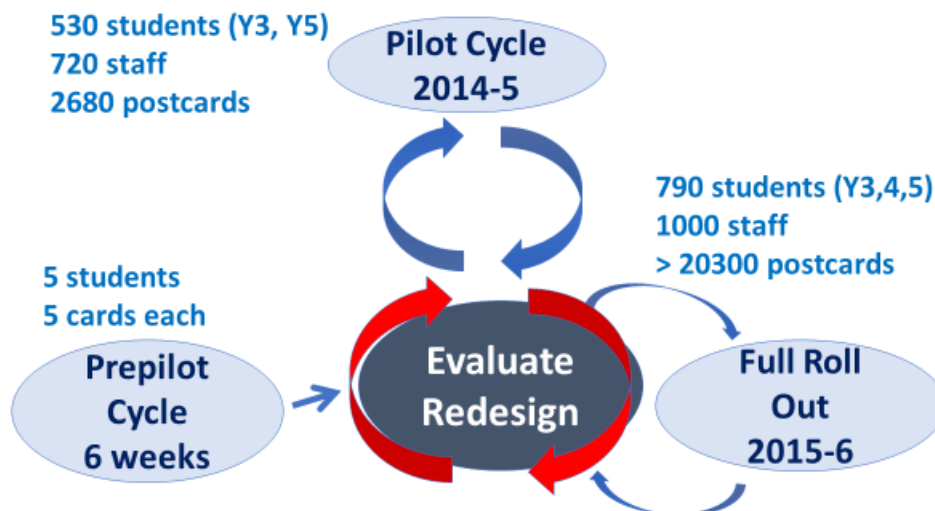
16.2 Aims of the Pilot Cycle

The aim of the FPs was to promote seeking feedback and help overcome the barriers to feedback seeking described in section 4.

The previous chapter discussed that I could not draw valid conclusions from the prepilot cycle. This cycle involved a larger cohort across a wider geographical area.

The specific aims of this cycle were to:

1. Trial the FPs on 530 students across two years:

    - All four modules in year 3, covering two hospitals in one NHS trust

    - Three modules in year 5 (general medicine, medicine of the elderly and general practice), covering six 6 NHS trusts and approximately 20 GP practices

2. Refine the FP design and how they were used

3. Explore the usability as a feedback seeking tool

16.3 Implementation- staff consultations

Figure 22 Stakeholders considered when implementing a formative WPBA tool
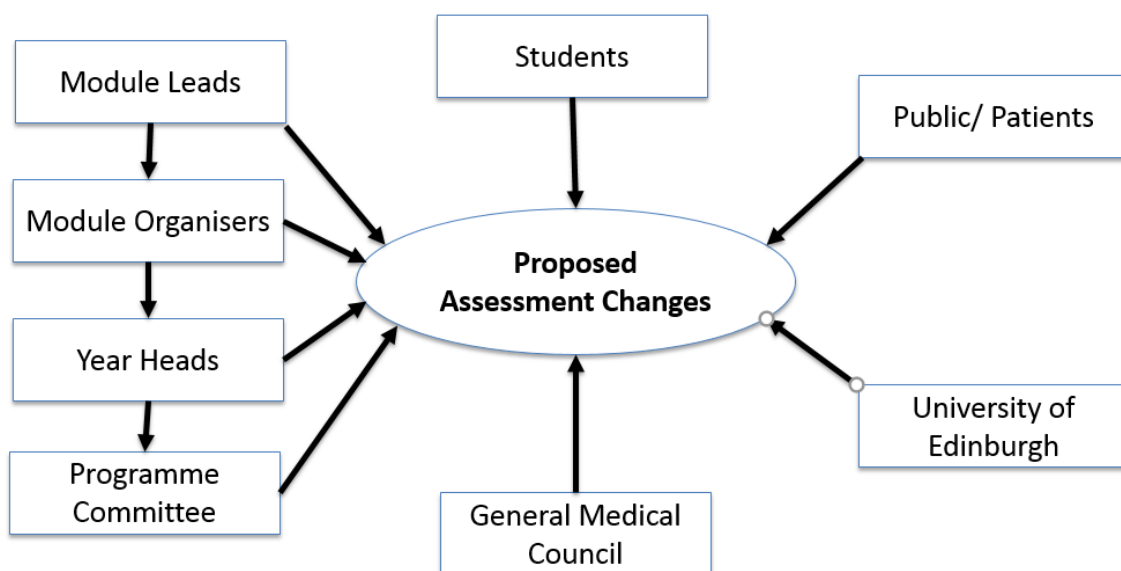
The design for this cycle was influenced by evaluations from the previous cycle and the views of clinicians in whose module I was implementing the FPs.

Prior to rolling out this second cycle, I met module organisers (MO) and site module leads (SML) in the different hospitals I planned to implement to FPs.

I endeavoured to include as many people as possible, raise awareness and address concerns, through presenting at year committee meetings, module meetings and hospital grand rounds. However, every MO and SML had different opinions on design, implementation and use, with some only agreeing to implementation if these conditions were met. While we aimed to have as standardised tool as

possible, the tool also had to be acceptable. Therefore, where there was no evidence base to support any particular method, we trialled some variances. Clinicians also made a number of useful, evidence-based suggestions for implementing the FPs, which we included.

16.4 Changes to FPs before and during this cycle

The table below summarises the key changes to the FPs for this cycle and rationale for these changes.

Table 4 Key changes to the FPs in the pilot cycle and rationale

	CHANGE TO FPs	RATIONALE
	Changes to FP design	
1.	Structured the feedback space for "strengths" and "how to improve"	Prepilot – students wanted more constructive feedback and suggested structure. Based on the "Stop, How to Improve, What to Maintain" feedback model
2.	Instructions detailing other health professionals could complete FPs. Space for NMC number	Prepilot – students would find this useful.
3.	Encouraging students to document a summary of the verbal feedback discussion themselves	Prepilot and clinician consultations - to encourage FPs to be less time consuming for clinicians and ensure the comments were legible and allow tutors to ensure students understood the feedback. Bok (2016) experienced similar problems and students completed their WPBAs themselves
4.	Global assessment statement added. Wording changed during this cycle.	Changes based on results of student and clinicians questionnaires in this cycle and clinicians feedback on project FP and newly published literature (Lefroy *et al.*, 2015)
5.	Space for clinician's email address. Short paragraph on using GMC number and email address to track tutor to return an anonymised copy for appraisal	Prepilot– many clinicians filled in their GMC number but were unsure of the benefit of this. Improve clinician engagement, provide evidence for appraisals and to contribute towards a teaching qualification run by EMS.

	purposes or contact the tutor if concerns Tick box at the back, which clinicians completed if they wanted anonymised copy for their appraisal	
6.	Changed barcode to a QR code	QR codes smaller
7.	QR code scanned with smartphone to take the tutor to a leaflet on giving feedback	Some clinicians felt they had insufficient training and lack confidence at giving effective feedback
8. .	Project FP (Card B) stopped after 6 months into the project	Data saturation reached. Clinicians preferred to email in comments or send through MO. More cost-effective.
	Changes to how FPs were used	
9.	One FP per week	Prepilot - volunteers unable to complete 6 FPs in four weeks. No literature on optimal number of formative assessments
10.	Content of the card would not contribute to final marks. Compulsory in year 5: students needed a minimum number Optional in year 3 - students had no set minimum number	Programme Committee would not allow assessment changes once the course had already started. UoE were resistant to the concept of set number of assessments but formative content. Foundation and Postgraduate training require trainees to complete a minimum number of WPBAs to progress, but the content is formative.
10. 11	Two modules in year 3 (CVS and Locomotor) set a list of tasks students were expected to complete FPs on	MOs wished to highlight important learning in their module.
11. 12	Students kept FPs until the end of the attachment and brought	Additional opportunity for a feedback dialogue. Help tutor to establish how the student progressed during their module.

	them to their meeting with their lead tutor	

16.5 Communication

16.5.1 To students

I authored a webpage on the VLE (appendix), emailed all students before commencing participating modules with information about the FPs and a link to the webpage and delivered a short presentation at the module induction. Students could direct queries to the MO, email me directly or place a comment on the VLE discussion board.

16.5.2 To clinicians

I presented at grand rounds, module meetings and departmental meetings in all participating trusts. MOs also emailed all teaching staff in their module and gave my contact details.

16.6 Evaluation Methods

Review of FPs completed

I audited completed FPs for quality assurance to review feedback and screen for unprofessional comments.

Questionnaires

Student and clinician questionnaires were distributed as summarised in the timeline (appendix). Details of these questionnaires are in the appendix.

Clinician questionnaires had low response rates so it is difficult to draw conclusions. However, most responders to the first questionnaire rated the FPs as useful or very useful and free text comments referred to them being "*quick*", "*easy*", "*and concise*".

Project FPs (Card B)

I continued to distribute a Project FP (Card B) for the first 6 months of this cycle until I reached data saturation. 478 project FPs were completed by 314 clinicians, at varying levels of training. 88 of these were GPs (28% of total). Comments from these cards were typed and analysed using Nvivo.

Interviews

Students and clinicians participated in interviews (see timeline).

Online Discussion Board

Students wrote anonymised comments and questions on the VLE discussion forum. These were mostly questions on practicalities, but some described problems they had encountered. Year 5 students

acknowledged that senior clinicians had more knowledge but struggled with their availability. In contrast, they found FY doctors much more available and willing to directly observe students.

Other data

Students spontaneously voiced feedback or ideas for improvement feedback on the online discussion board or by emailing me directly. Clinicians also delivered feedback through module and year meetings, email or in person.

16.7   Results of evaluations

16.7.1 Review of feedback on the FPs

720 clinicians completed between 1 and 23 FPs each (mean value of 4.4 FPs per clinician). This generated 2680 FPs. I reviewed feedback comments on the initial batches of FPs, then conducted spot checks at the end of modules.

The key points from my evaluation were:

- Providing structure to include comments on how to improve increased constructive feedback, although many clinicians still left this space blank or wrote non-specific comments such as "*continue*" or "*more practise*".
- Some FPs only contained extremely brief, generic feedback comments, the most common were "*good*" or "*very good*".
- No cards contained unprofessional comments
- Very few students chose to complete the FPs themselves.
- The majority of FPs were completed by doctors, but some students chose nurses, midwives and phlebotomists.

16.7.2 Clinicians' opinions

There was an interesting contrast in evaluation responses between hospital clinicians and GPs.

Responses from GPs

While responses to the first questionnaire were positive, GPs responding to the second questionnaire were overwhelmingly negative about the FPs. 56% thought they were not useful because they felt students only used them when they felt that "*they only asked for a FP when they had performed a task well*".

Other GPs described them as a "*nuisance*" and felt they were time-consuming, taking time away from teaching and adding to paperwork. Some suggested using a practice stamp instead of writing their email address to make them less time-consuming. Only 25% rated them as useful, allowing specific

feedback and helping the student to identify they were receiving feedback. Many felt the global assessment statement was useful but some suggested removing it to make the FPs truly formative.

Similar themes arose from the Project FPs and from module meetings in GP:

- GPs felt the FPs were more "time consuming" than previous systems and felt this duplicated the feedback they already gave, either verbally or using their own forms.
- Other GPs found the FPs useful to remind them to give feedback and made feedback more formal.
- Many GP practices already had a system of encouraging feedback conversations and they felt the FPs were an unnecessary and inferior duplication.
- One GP practice refused to participate any further.

The GP module was structured differently to hospital attachments, with 1 to 1 supervision for much of the placement. As a result, GPs got to know their students well and could directly observe performance better. They also had their own internal feedback forms to record detailed written feedback, which students kept.

Responses from Hospital Clinicians

In contrast, hospital clinicians were much more positive. 72% felt they were useful in helping develop a feedback dialogue and structure feedback. They could gather multiple opinions of the student's performance to improve discussions during end-of-attachment meetings and to complete students' end-of-attachment forms. They thought students found the written feedback helpful. They reported that they were quick to complete, not time consuming at all and liked the general design and layout, including the photograph and size. 70% felt the global assessment statement was useful because it helped students monitor progression.

A small number thought students had to complete too many FPs and disliked students having so much choice about when and who could complete the FPs.

Similar themes arose from the Project FPs:

- Clinicians felt the FPs improved the quality and quantity of their feedback by helping them structure it and ensuring it was timely and focussed.
- The FPs prompted them to give feedback
- They improved student supervision in end-of-attachment meetings
- They liked the size and design. Some liked a paper-based form while others requested an electronic version.

16.7.3 Design of the FPs

In general, students were positive about the FP design. They liked the small size, which made them more portable, and felt they were an improvement on the previous mini-CEX forms. However, clinicians needing to fill in their GMC/NMC number created a barrier as many either did not know their number or did not wish to record it.

Many clinicians felt the initial global assessment statement was unhelpful, describing it as "*difficult and possibly misleading*" and "*not appropriate*" if students were not at the level needed to pass the Finals exam but were on an appropriate trajectory to pass by the end of the year. They worried that marking the student as a fail might reduce motivation and upset them.

While some students rated the global assessment statement as useful, many felt clinicians lacked training to decide whether the student would pass or fail, or realised they were reluctant to fail them. They felt this question reduced the educational impact of the FPs and made them more of a "*hoop to jump through*". The majority preferred an alternative phrasing using a traffic-light system, which we changed to (see versions at the end of this chapter).

16.7.4 Implementation and communication

The MO for one module fed back concerns about tutors' dissatisfaction with the FPs, describing students not knowing about the FPs or how to use them. They wanted improved communication about the FPs to students. There were no issues about the FPs raised at other module meetings.

However, students reported confusion amongst clinicians about the purpose of the FPs and how they were to be used. Many encountered clinicians who were not aware of them. Some informed clinicians themselves, by forwarding email information from the MO onto them.

While MOs reported that they emailed clinicians about the FPs, it is likely that they could have omitted some and not emailed junior doctors. Furthermore, the FPs were implemented during school summer holidays when many clinicians away, so may not have read emails immediately on return.

16.8 A note on the basis for using the FPs at the main intervention

The FPs were designed to replace the different summative WPBAs which existed at that time. These WPBA included log books, work books, mini-CEXs and CBDs. Students found the variety of WPBAs confusing and overwhelming and, like many medical schools, Edinburgh Medical School planned to move from summative to formative WPBAs before I started my fellowship.

The implementation of the FPs was driven predominantly by what would promote the most engagement in each module. Assessments need to be acceptable, reliable, valid, cost effective

and deliver an educational impact (Van Der Vleuten, 1996), so if clinicians did not find the FPs acceptable, they were unlikely to agree to them being implemented in their module. In many cases this meant directly swapping one for the other and incorporating certain aspects of how pre-existing tools were already used. We therefore made a pragmatic decision to develop and adapt from pre-existing tools and exchange one for the other with the aim of having one single unanimous style of WPBA in all modules in all years. Furthermore, there are a number of summative and formative WPBA tools described and evaluated in the literature, so I did not wish to focus my thesis on the design and development of a completely new tool.

As my interest was in feedback-seeking as described in chapter 3, I was heavily involved in developing and implementing the FPs, so had some control over how this was done. In particular, my data informed the development and subsequent iterations of the FPs and how they were used throughout the three development cycles. However, the design and development was not completely atheoretical and table 7 (chapter 16) references some of the evidence to support changes made.

For example, the global assessment statement was added in the plot cycle and reworded during this cycle. Educational psychology literature suggests that grades have a negative impact on learning and performance by reducing self-esteem in underperforming learners, promoting negative learning behaviour by encouraging students to compare themselves with each other rather than become intrinsically motivated to improve, and by distracting the learner from feedback about performance to feedback about the person (Butler, 1987; Craven *et al*., 1991, Kluger and DeNisi, 1996). However, much of this research has been drawn from areas outside medical education and even from school education. Medicine is a competency based degree, so using standards of competence as a reference aids students to know if they are on track to achieving these competencies (Eva and Regehr, 2005; Lefroy *et al*., 2015b). In particular, one UK study (Harrison *et al*.,2016) found that undergraduate medical students found grades helpful to reassure them that they were reaching the standard required and clarified the level expected. Another crossover study (Lefroy *et al*., 2015a) of students using WPBA with and without grades found that the majority preferred receiving grades with their feedback as they aided self-assessment and helped establish goals. Only one participating student felt receiving a grade led them to focus on the actual grade rather than the feedback received. Newly emerging literature such as this led to the addition of the global assessment statement

An example of a change informed by my findings is the feedback giver. Initially, MOs specified that they only wanted students to seek written feedback from consultants or senior registrars as they

were concerned about very junior doctors lacking the skills to be able to deliver useful feedback. The WPBAs used before the FPs were only allowed to be completed by senior registrars and consultants. However, as my research progressed, it became apparent that students found very junior doctors provided the most useful feedback. Throughout the thesis I described students' fear of clinicians, especially more senior ones, as a barrier to seeking feedback, the reduced availability of more senior clinicians and the increased credibility of junior doctors they had seen performing tasks they would be expected to do very soon. There was some resistance to allowing very junior doctors to complete FPs, which required considerable negotiation.

Unfortunately we were restricted by various stakeholders (Fig 23, chapter 16) in addition to availability of administrator support, training of a new administrator once appointed, cost and technology. For example, the barcode and QR systems were introduced because there was funding for an online system to collect and collate feedback at the time of implementation. Of note, a system (Pebblepad) was introduced after my fellowship was completed. Other challenges I needed to negotiate included number of cards required in each module and for what tasks, as this was a condition many module organisers set in order to allow the FPs to be implemented. Another challenge was the quality of feedback. Understandably, the aim of the FPs was to facilitate students to receive useful written feedback. However, I have discussed the quality of feedback in the pilot cycle (chapter 16), with some cards being submitted blank or with 1-2 words of feedback written. Ensuring clinicians completed a FP or write useful feedback was incredibly difficult to enforce in reality, despite the number of site visits, presentations and training I delivered, and I had no way of enforcing this.

In summary, some of the features of the FP were informed by evidence in the literature but others were necessary from a practical point of view to make the tool usable, cost effective and acceptable to people using it. Usability and clinician acceptability were significant influencers. However, despite students contributing to the design throughout the cycles it is likely that the FPs were too "teacher-centred" and not sufficiently "student-centred", which contributed to the findings in the second part of my thesis.

16.9 Versions of the FP used in the pilot cycle

Figure 23 Pilot feedback postcard: version 1

Front of card   Back of card

Front of card:

Monochrome Photo of student

QR code

Name:

What did you do?   MoE ☐   GP ☐   GenMed ☐

Where? _____   When? _____

Feedback to student - see over for guidance

Strengths:

How to improve:

If this were the final year exam, would the student: pass ☐ fail ☐

Email address: GMC No:

....

Back of card:

Feedback Postcards Project
CARD A
This project aims to increase the amount of recorded feedback a student receives to reflect on at a later date.

CARD A is for feedback on student performance.
CARD B is for tutor comments on this new system.
There is further information at : bit.ly/edmedfeedback

FEEDBACK RECIPIENT (details overleaf)
Ask a "tutor" to be prepared to give feedback at the end of a session such as bedside teaching, clinic, a tutorial or a ward round. Fill in what you did, where and when on both CARDS A and B then give them to whoever is giving you feedback.

FEEDBACK GIVER
Please complete CARDS A and B.

CARD A: Write what you think, good and bad. Please be realistic and constructive!
Consider the following:
- Strengths
- How to improve (students are particularly keen on this)
- If this was their final year exam, would the student pass?

These cards are not to be used to report concerns about probity, illegal activities or unprofessional behaviour. Please contact the Year Coordinator or the Module Organiser.

CARD B: Please tell us what you think of this way of giving feedback.

Please tick this box if you would like a copy for your appraisal ☐

Figure 24 Pilot feedback postcard: version 2

Year 3 feedback cards

Monochrome photo

QR code

1

What did you do? GI ☐ CVS ☐ Resp ☐ Loco☐

Name:

Where? | Date:

Feedback to student - see over for guidance

Strengths:

How to improve:

Based on this, is the student on track for the current stage?
Yes ☐   Borderline ☐   No ☐
If this were the year 3 year OSCE, would the student pass?
Yes ☐   Borderline ☐   No ☐

Signature: ....
Grade: ....Dr/nurse/pharmacist etc (Dr must be ST1 or above)
Email address: GMC No:
....

Feedback Postcards Project   **CARD A**
This project aims to increase the amount of recorded feedback a student receives to reflect on at a later date.

CARD A is for feedback on student performance.
CARD B is for tutor comments on this new system.
There is further information at :
https://www.eemec.med.ed.ac.uk/pages/feedback-cards

FEEDBACK RECIPIENT (details overleaf)
Ask a "tutor" to be prepared to give feedback at the end of a session such as bedside teaching, clinic, a tutorial or a ward round. You can ask a doctor, a senior nurse, a pharmacist or any other health professional. Fill in what you did, where and when on both CARDS A and B, then give them to whoever is giving you feedback.

FEEDBACK GIVER
Please complete CARDS A and B.

CARD A: Can be completed by the student or the tutor, as long as the tutor signs it.
Write how you think the student performed. Please be realistic and constructive!
Consider the following:
• Strengths
• How to improve (students are particularly keen on this)
• If this was their final year exam, would the student pass?

These cards are not to be used to report concerns about probity, illegal activities or unprofessional behaviour. Please contact the Year Coordinator or the Module Organiser.

Please tick this box if you would like a copy for your appraisal ☐

Figure 25 Pilot feedback postcard: version 3

PHOTO

*QR code

1

Name:
CVS ☐   Loco ☐   Resp ☐   GI ☐

What did you do:

Site: | Date:

Summary of feedback can be written by student or doctor/nurse

Strengths:

How to improve:

☐ Red: demonstrated level below that expected for this stage
☐ Amber: demonstrated expected level for this stage, not yet at end of year OSCE level
☐ Green: demonstrated level expected at end of year OSCE

Signature: .... Grade: ....Dr/nurse/pharmacist etc
Email address: GMC / NMC No:
....

Feedback Postcards

These feedback postcards aim to increase the amount of recorded feedback a student receives during the attachment.
Your tutor will need to see your cards at the end of the attachment and complete your professionalism form. There is further information at :
https://www.eemec.med.ed.ac.uk/pages/feedback-cards
or email **assess.feedback.med@ed.ac.uk** to let us know what you think.

FEEDBACK RECIPIENT
Before completing a task, ask a "tutor" to be prepared to give feedback afterwards. You can ask a doctor, a senior nurse, a pharmacist or any other health professional. Fill in what you did, site and date, then give them to whoever is giving you feedback. You can receive feedback on tasks such as bedside teaching, clinic, a tutorial or a ward round

FEEDBACK GIVER
A summary of the feedback you give can be written by you or the student. Please be realistic and constructive and consider:
• Strengths
• How to improve (students are particularly keen on this)
• If this was their end-of-module year exam, would the student pass?

GMC NUMBER
Over the next year, we hope to give tutors feedback on their feedback for their own development and for their appraisal. Please fill in your GMC number so we can track your card easily.

These cards are not to be used to report concerns about probity, illegal activities or unprofessional behaviour. Please contact the Year Coordinator or the Module Organiser.

Please tick this box if you would like a copy for your appraisal ☐

Figure 26 Breakdown of clinicians who completed the FPs in the pilot cycle
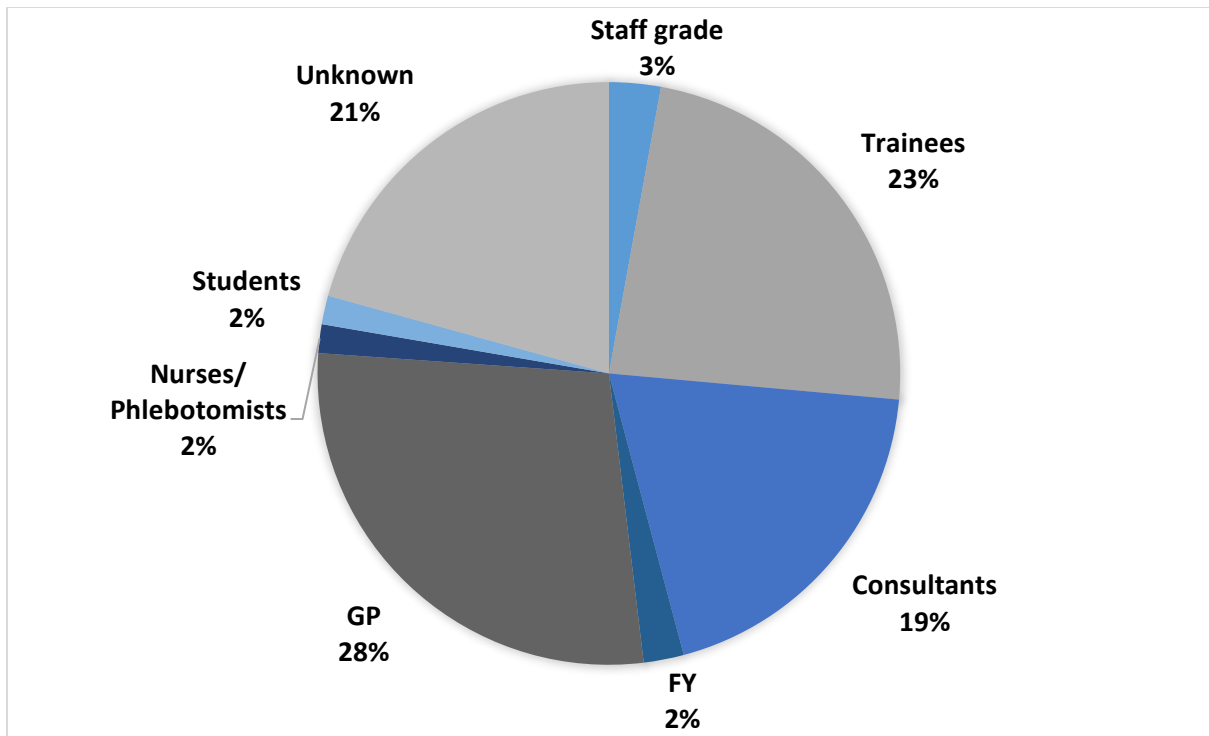
16.10 Summary

This chapter describes the changes to the FP design and how they were implemented as part of a feedback system, along with rationale for those changes.

The next chapter outlines the full roll-out cycle.

17. The Full Roll Out Cycle

17.1 Introduction

The previous chapters discussed the prepilot and pilot cycles of developing and implementing a formative WPBA tool to promote feedback-seeking. This chapter describes the final cycle, the full roll-out cycle.

At the end of this academic year when the FPs were fully implemented, they were used by 790 students and resulted in 20 300 FPs completed by over 1000 clinicians across 6 different NHS trusts in Scotland, as geographically diverse as the Scottish Borders and the Islands (see section 1 for map).

17.2 Aims

The overarching aim of the FPs was to enable feedback seeking in clinical attachments and help overcome the barriers to seeking feedback described in section 4.

The aim of this cycle was to roll out the FPs across the whole of years 3, 4 and 5.

17.3 Consultations with clinicians

In the last cycle I found many clinicians and students continued to lack awareness about the FPs and their purpose, so I needed to improve communication before initiating this cycle.

With this in mind, I met with MOs participating in the pilot cycle to debrief and discuss suggestions for improvement. I then met remaining MOs and attended module and departmental meetings across different sites.

17.4 Design Changes

The table below summarises changes made.

Table 5 Changes made to FP design for the full roll-out cycle

Design Changes	Rationale
Area for action points	Recommended by MOs. Encourages brief reflection and student to set further goals
Definition red, amber and green on back of the FP	More space for feedback
Explanation of need for GMC number on the back	Clinicians repeatedly asked why this was required and students described this as a barrier

Some modules had a list of tasks students needed to be observed performing and getting an FP completed on	MOs consider these to be essential activities to provide scaffolding for students to highlight what they should focus on

Figure 27 Full roll-out version of FP: Year 3

Remember to ask for feedback BEFORE completing the task

PHOTO | QR code | 1

Name:

CVS ☐   Resp☐   Loco☐   GI ☐

What did you do:

Site: | Date:

Summary of feedback can be written by student or health professional

Strengths:

How to improve:

Please tick: (see over for descriptors): Red ☐   Amber☐   Green☐

Action points (student to complete this box)

Signature: .... Grade: ....Dr/nurse/pharmacist etc.
Email address: GMC / NMC No:
....

These feedback postcards are a tool to facilitate feedback discussions, record feedback a student receives for remembering and reflecting later and demonstrating progression. There is further information at :
https://www.eemec.med.ed.ac.uk/pages/feedback-cards
or email **assess.feedback.med@ed.ac.uk** to let us know what you think.

WHAT THE STUDENT DOES
Before completing a task, ask a "tutor" to be prepared to give feedback afterwards. You can ask a doctor, a senior nurse, a pharmacist or any other health professional. Fill in what you did, site and date, then give them to whoever is giving you feedback. You can receive feedback on tasks such as bedside teaching, clinic, a tutorial or a ward round

WHAT THE FEEDBACK GIVER DOES
A summary of the feedback you give can be written by you or the student. Please be realistic and constructive and address:
- Strengths
- How to improve (students are particularly keen on this)

Then indicate level of performance:
Red: demonstrated level below that expected for this stage
Amber: level expected for stage, not yet at end of Year 3 OSCE level
Green: demonstrated level expected at end of Year 3 OSCE

These cards are not to be used to report concerns about probity, illegal activities or unprofessional behaviour. Please contact the Year Coordinator or the Module Organiser.

GMC NUMBER
Over the next year, we hope to give tutors feedback on their feedback for their own development and for their appraisal. Please fill in your GMC number so we can track your card easily.

Please tick this box if you would like a copy for your appraisal ☐

Figure 28 Full roll-out version of FP: Year 4

Figure 29 Full roll-out version of FP: Year 5

17.5 Streamlining and cost saving measures

During the last two developmental cycles we significantly reduced the cost and time required to run this project. Most of the administration was frontloaded to the start of the year. The project was run by an administrator with minimal supervision from me.

Table 6 Streamlining and cost-saving measures to the FP process

Process	Streamlining
Making Feedback Postcards Time reduction: 2 weeks to 1 day.	A standard mail-merge function combines student details onto a blank FP template by an administrator instead of outsourced to IT. This enabled us to accommodate last-minute changes, such as resit students. Sent for printing in module and rotation order to reduce sorting time.
Printing Time reduction: 2 weeks to one hour. Cost reduction: 82%	Small numbers are printed ourselves on a standard printer e.g. to replace lost cards, resit students. Printing in monochrome instead of colour reduced printing cost by 82%.
Making up FP packs	Project FPs discontinued once data saturation was achieved. One envelope per pack instead of per card reduced cost and time to make packs. Packs put in named envelopes so easier to distribute
Labels	Envelope labels included a return address in case cards are lost
Distribution	Packs distributed at the start of the year, rather than before each module. Very few were misplaced. Blank FPs could be printed off from the VLE by students if they lost their FPs or wanted to complete additional cards
Returning F Ps	Tutors document the number of FPs completed on the student's professionalism form. FPs could be returned out-of-hours to a postbox in the medical school, which is helpful for students on peripheral placements
Uploading F Ps **onto the student's online VLE**	FPs were printed on the same thickness of card to prevent jamming when scanning.

Figure 30 Summary of cost and time-saving steps taken to the FP process
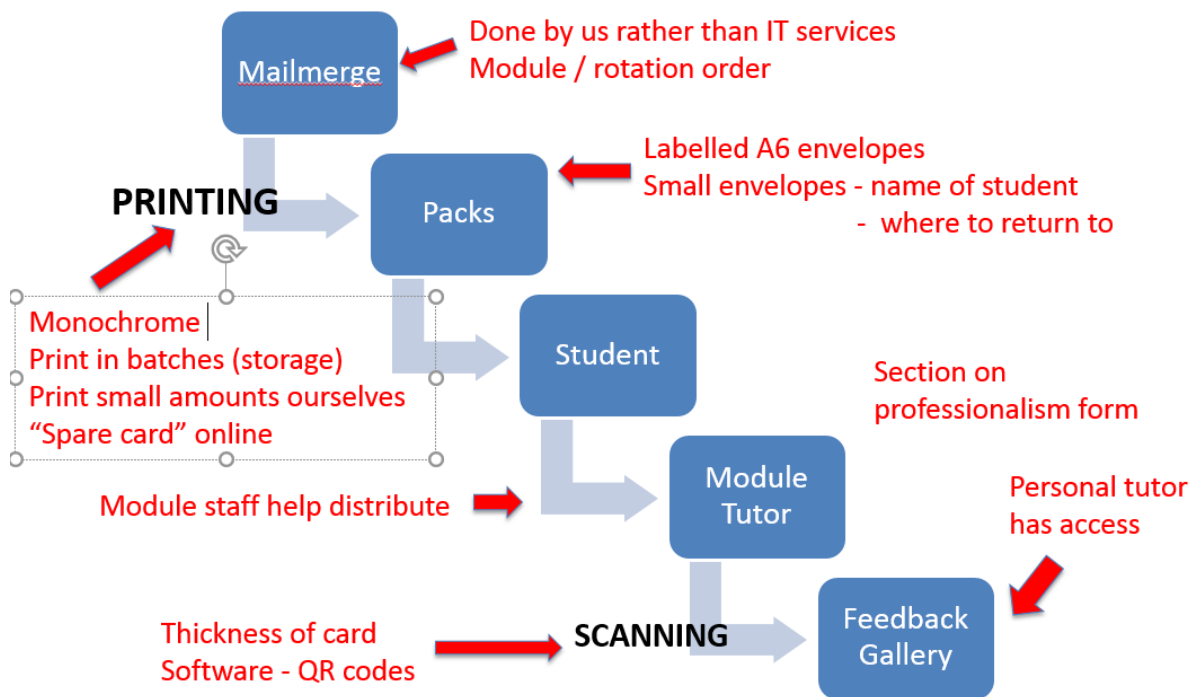
17.6 Standard Operating Procedure

A standard operating procedure was created to help train the administrator, detailing the exact steps used to create the FPs and distribute them. This is available in the appendix

17.7 Summary

This section describes how a formative WPBA tool was implemented into a medical school which has students spread across a wide geographical area. Design and implementation were informed by the literature and data from clinicians and students, collected through questionnaires, project FPs, interviews and online discussion forums. This chapter describes the final stage of implementation, including changes to the design and strategies to improve cost and time-effectiveness. Eventually, this project was run by a single administrator, with occasional input from a clinician. As I was only on a two-year fellowship, this was vital for sustainability.

Section 6 will now discuss the impact of the FPs on feedback seeking behaviour to address my final aim.

Section 6

How does a formative workplace-based assessment

tool impact on feedback-seeking behaviour

Outline of thesis so far

Section 1

Feedback improves learning and performance but learners (including students at EMS) feel they do not get enough feedback

There are a number of challenges with receiving and giving effective feedback and feedback-seeking can help overcome these feedback challenges. Despite this, students do not often seek feedback, with junior students seeking less feedback than senior students

Overall Research Question: How can we promote development of feedback-seeking behaviour?

Section 2: The influences of FBSB in medical education are poorly understood. There are few high quality studies supporting any interventions having an impact on FBSB

Aim: To develop an understanding of the influences of feedback-seeking in undergraduate medical education and how we can promote it.

1. To explore what motivates learners to seek feedback in the clinical environment and explore the barriers that inhibit feedback seeking behaviour

2. To explore if a formative WPBA tool can help learners overcome the barriers to feedback-seeking described in the first aim.

Section 3: Charmazian Grounded Theory study using data from staff and student interviews and questionnaires and minutes of staff meetings

Section 4: FBSB is influences by intrinsic, extrinsic (staff and environmental) and feedback enablers and barriers

This section: Exploring the impact of a formative WPBA tool on FBSB

Section 5: Designing, developing, implementing and evaluating a formative WPBA tool

The previous chapters have described the importance of feedback-seeking and the intrinsic, extrinsic and feedback barriers to students seeking feedback. As part of this research, I developed a feedback-seeking tool to enable students to seek feedback. This section explores the impact of this tool on feedback seeking behaviour and if it helps students overcome the intrinsic, extrinsic and feedback barriers described in earlier chapters. I will start with discussing the impact of the tool on intrinsic feedback seeking barriers.

18. How did the FPs impact on intrinsic barriers to feedback-seeking

Section 4 describes a number of intrinsic factors which promote or inhibit feedback seeking behaviour in students. The relationship between intrinsic and extrinsic barriers are summarised below (originally described in section 4).
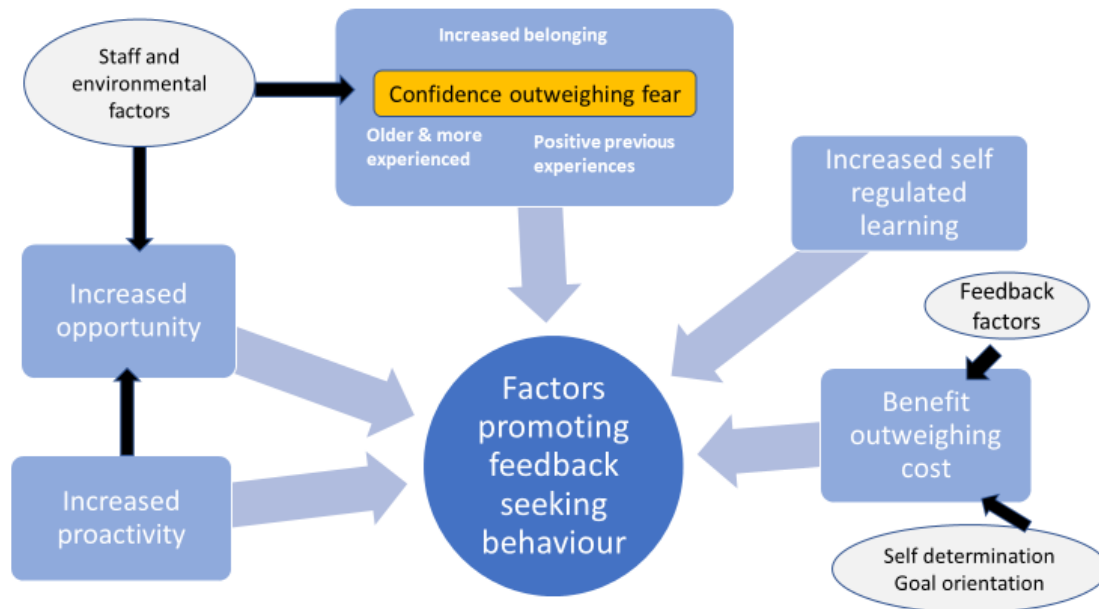
I will first discuss the questionnaire responses, then explore the impact on intrinsic barriers to seeking feedback.

18.1 Questionnaire results

The table below lists the questionnaires I used, the population they were distributed to and the response rates.

The full details of each questionnaire, including the questions asked and results for each question, are in appendix 6. Appendix 5 indicates which questionnaires were used to address which aim. Table 9: Questionnaire response rates

Questionnaire	Date	Population	Response rate
1	August / September 2014	Two fifths of year 5 students	72 students (66%)

		(FPs only implemented in these rotations. Other years were on holiday)	
2	August / September 2014 (2 months into the pre-pilot cycle)	GPs and hospital clinicians	8 out of a potential > 50 responses
3	January 2015	Years 1, 3 and 5 students	207 students (29%)
4	Summer 2015	GPs and hospital clinicians	22 hospital clinicians (out of a possible several hundred) 16 GPs (out of 30 GP practices with several GPs in each practice).
5	Autumn/winter 2015	Years 3, 4 and 5 students	85% (378 students)

I analysed the questionnaire responses descriptively. A summary of the results are below.

Questionnaire 1

This questionnaire helped to inform the design of the FPs, as discussed in the previous section. We had mixed responses about the usefulness of the FPs, with the majority of students being neutral. The majority of students found the addition of a question asking the feedback-giver if they were on track to passing their final year exams useful. More students the addition of a question asking about how well they performed a task using traffic lights criteria (red for fail, amber for borderline, green for pass) instead of a straightforward pass or fail. When we asked if students had been able to get sufficient numbers of FPs completed by doctors at ST1 level or above, senior nurses or nurse practitioners, most unfortunately had not. This was explored further in interviews and questionnaire 5.

Questionnaire 2: low response rate so I could not draw conclusions from these results. Free text comments were explored further in interviews.

Questionnaire 3: Low response rate so no conclusions drawn based on the questionnaire alone. However, the results obtained fit with qualitative studies from other previous research, as discussed in chapter 1. This questionnaire was used to support my application to renew ethics approval to collect further qualitative data.

Questionnaire 4: low response rate so I could not draw conclusions from these results. Free text comments were explored further in interviews.

When asked if there were times students would have liked to seek feedback using the FPs but didn't, there were mixed responses varying from most of the time to sometimes. The majority of students were only sometimes successful at getting feedback when they asked for it. Interestingly, only ~10% of students reported that most of the time they tried to complete a many FPs as possible and the majority of students reported seeking feedback using the FPs on tasks they knew they could perform well. Students reported only seeking feedback on challenging tasks half of the time or sometimes.

We also asked about the implementation of the FPs as we discovered that some modules were using them slightly differently. Most students preferred for the grading on the FPs to be entirely formative and to not have to keep getting more FPs completed if they received a red (fail) grade until they required number of passes on their FPs. There were mixed responses about whether they found having a compulsory list of tasks useful, with slightly more students finding this unhelpful.

When asked about the feedback they may receive, most students preferred to get feedback acknowledging their strengths and letting them know how to improve. Most students found the red (fail)/ amber (borderline)/ green (pass) rating useful although a significant number (~33%) did not. There were mixed responses to how helpful the FPs were, with approximately half of students finding them useful and a third finding them unhelpful.

18.2 Fear

To recap, section 4 described the impact of fear of the clinical environment, fear of clinicians and fear of the cost of receiving negative feedback inhibiting feedback seeking, summarised in the concept map below.
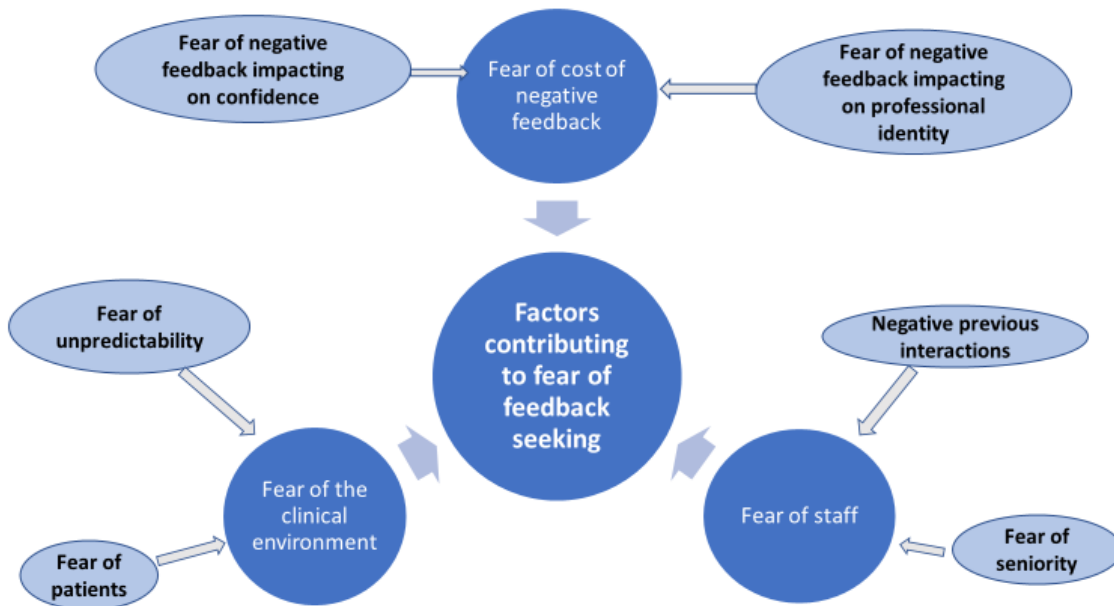
I will now discuss how a formative WPBA tool affected fear.

18.2.1 Overcoming general fear of feedback seeking

Students described the FPs encouraging them to overcome their fear of seeking feedback, often using the word "*forced*" to describe themselves having to overcome their fears and being pushed out of their comfort zone. Some wondered if using the FPs earlier on in the course, when they first started in hospital placements and were more fearful, would have been more useful when they were more fearful of seeking feedback, to make them more familiar and experienced with seeking feedback.

Rachel Y5:

> you need the forms to kind of encourage you to ask for feedback, because you can't
> chicken out of it if you've got to hand the form in

Questionnaire winter 2015 (Y5)

> I think I would have found them even more useful in 3rd Year, when I was more
> apprehensive about asking for feedback - I would be more confident with them.

18.2.2 Fear of clinicians

Some students enjoyed using the FPs but others disliked them. However, even students who disliked them described them as increasing the likelihood that they would approach clinicians to create learning opportunities and seek feedback. The FPs helped overcome fear of approaching clinicians by providing an explicit reason to initiate conversations ("*a way in*") and some perceived that getting a FP completed was a more concrete reason to approach clinicians than because they wanted teaching.

Sandra Y4

> *you felt more like you had the right to ask…it's an entrance to ask for feedback, 'cause you have a direct reason… it's just easier to approach someone when you have concrete hoop you have to jump through*

They described the FPs as an "*excuse*" to ask for feedback to support their request *("backs me up")*, making chances of success more likely because clinicians knew students needed them completed.

The FPs also reduced their fear of negative clinicians' reactions. Clinicians still reacted negatively to feedback seeking attempts, but the hostility was directed at the medical school rather than the student, "*deflect any annoyance*" or "*pass on the blame*".

Becky Y5:

> *I like having a formal form or a postcard, that kind of backs me up … I can say Oh the medical school want you to fill this out, even though really it's for my own benefit.*

Year 5 students had to get half of their FPs completed by consultants, which some resented as they found them less approachable. However, others described being "*forced*" to approach senior clinicians and the FPs giving them more confidence to overcome their fear of talking to senior clinicians.

Linda Y5

> *it forces you out of your shell if you're shy talking to senior consultants…it's good for you to have to do that.*

Unfortunately, other students did not feel their confidence improved and still felt uncomfortable approaching clinicians, but they were now made to do it as a requirement of the module. Some resented this lack of autonomy. It made them feel uncomfortable and awkward and because they disliked receiving negative reactions from clinicians. For these students, the FPs increased the cost of seeking feedback by increasing clinicians' annoyance and hostility, creating additional work on top of teaching them. They described these conversations negatively, using hostile words such as "*confront*", "*feeling crass*".

Annabel Y5:

> *I had to confront him and say, actually this is my last week and would be good if we got feedback*

> *You have no idea how annoying you feel approaching a doctor and asking them to*
> *fill in a piece of paper because you just took some blood (Y5)*

Introducing the FPs introduced a new anxiety. Students now worried about clinicians' opinions of their motives for attending teaching, especially if they would be viewed as attending and participating to complete a FP rather than to learn. Some worried that not having enough FPs completed would be interpreted as not being adequately engaged with the module. They also worried that they would be seen as "*needy*" because they wanted feedback, and hence found feedback seeking conversations "*frankly embarrassing*".

Rachel Y5:

> *You're there because you want to learn, not because you have to get your*
> *paperwork filled in. Sometimes I don't ask for forms to be signed, even though you*
> *know that you need them…because I don't want them to think, well, I'm only here*
> *to get my form signed.*

Some students felt sandwiched between conflicting demands between the clinicians teaching them and the medical school. This conflict was more prominent on GP placements, where GPs strongly opposed the FPs because they did not feel they were beneficial. However, students needed to complete FPs and worried that approaching a GP to complete one could affect their relationship with their tutor and therefore the teaching and grade they received.

Y5 Questionnaire winter 2015:

> *It did put me in an awkward position on day 1 as I felt stuck between the university*
> *and the GP practice. The practice say the reason they do not wish to take part is*
> *partly because they feel that they give enough feedback verbally*

18.2.3 Fear of negative feedback

While fear of negative feedback inhibited seeking feedback, students appreciated that the FPs couldn't overcome this for them and they needed to still seek feedback, even if it might be negative. They understood it was their responsibility to take ownership of their learning and actively seek feedback on areas they found challenging. The benefits of seeking feedback to develop competence on an important task outweighed their fear of negative feedback, but the FPs did not affect this.

Rachel Y5:

> *I think that's your responsibility as an adult, to be like, this is the thing that I need to get feedback on because I need to learn that. And I don't think any system can take away from you being, like, ok it's not very nice to hear that I'm rubbish at this but I need to know that!*

In summary, the FPs helped some students overcome their fear of seeking feedback, in particular approaching clinicians, their fear of senior clinicians and the response they might get. They did not overcome their fear of negative feedback but students accepted this was not something they could gain from a WPBA tool. Some students felt the FPs increased hostile responses and felt caught between conflicting demands of the medical school and their tutors. The FPs did not help overcome students' fear of clinicians developing a negative opinion of them. Many overcame their fear because they had to, rather because they chose to, which contributed to resentment.

18.3 Increasing confidence to overcome fear

Confidence needs to overcome fear for students to seek feedback (section 4).The FPs provided a confidence "*booster*" to students who otherwise lacked confidence to seek feedback. They helped them approach clinicians, overcoming fear of clinicians. Some felt they would not have had the confidence to FBS without them.

Becky Y5:

> *I think if you don't have anything and you just go to someone and say oh how could I do better, well, I might not even have the confidence to do that, depending on how intimidating that member of staff. I quite like having a form that just enables you to get feedback.*

The design of the FPs was one of the contributing factors, as they felt the university logo and photo made them look "*official*" and "*formal*", so their feedback seeking attempts were taken seriously.

18.4 Age and Experience: introducing them earlier

Section 4 described older, more experienced students being more likely to seek feedback, recapped in the concept map below.
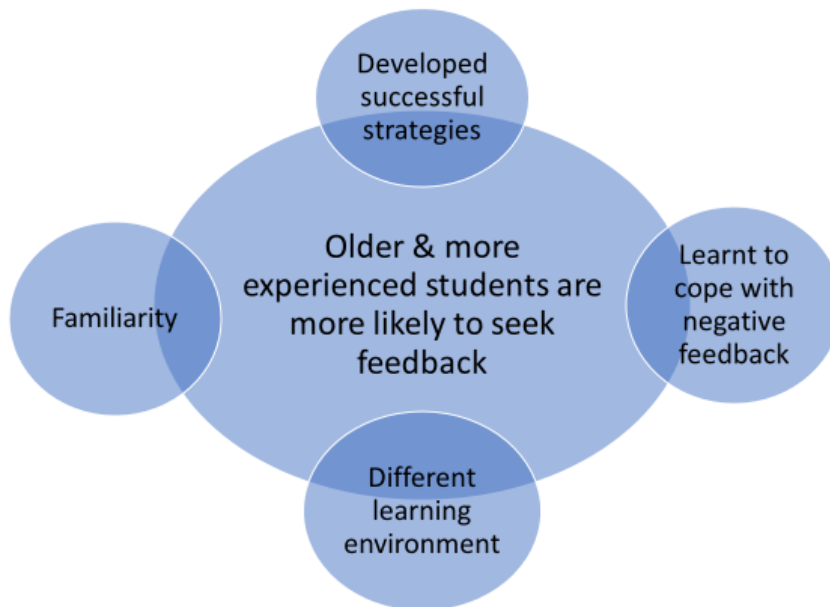
While some senior students found the FPs useful, others suggested introducing them earlier in the course would have made them more useful by increasing their confidence at a time when they were more fearful of approaching clinicians and of the clinical environment. The FPs would have extrinsically motivated them to approach clinicians when younger, encouraging earlier development of successful feedback seeking strategies. Furthermore, reviewing their FPs from earlier years could help remind them of how far they had progressed and the skills they developed, which would increase confidence in their abilities. This would help them realise how useful the FPs were in hindsight.

Rachel Y5:

> *If it came in all the clinical years across all modules, it would be so helpful because*
>
> *I can imagine reflecting, even looking back to the end of 3rd year and thinking oh*
>
> *my god! Look at all these things that I've learnt how to do!*

Many did not find them useful in their final year. These students had already successfully developed strategies to approach clinicians by this time and felt they already were able to seek feedback, so did not need a tool to help them. They perceived the FPs to be paternalistic, referring to them as *"juvenile"*, *"evil"* and *"patronising"*, because they felt that they should be expected to be responsible for their own learning by their final year. The introduction of FPs made them feel as if the medical school perceived they had not developed this. The FPs also removed their feelings of autonomy, because they were now expected to seek feedback because they were told to rather than because they wanted to. As a result, many felt the FPs were too time consuming for the benefits gained, and in fact many did not perceive any benefit at all, referring to them as *"a waste of time"*.

Questionnaire winter 2015 (Y5):

> *I am a professional young adult working in an environment which frequently encourages teaching of others. I frequently get feedback and if I need feedback, I will happily ask for it in person.*

In summary, the FPs could be useful for younger, less experienced students who lacked confidence in approaching clinicians, to help promote earlier development of successful feedback seeking strategies. However, senior students viewed them as paternalistic tools which removed their autonomy. These students had already developed successful feedback seeking strategies and responsibility for their own learning. Implementing the FPs earlier in the course may have been beneficial, but not in their final year.

18.5 Self-Regulated Learning (SRL)

Section 4 described self-regulated learners being more likely to seek feedback to aid goal setting, identify and plan how they can reach these goals and if they were at the standard expected for their stage. Self-assessment mismatch also drove feedback seeking, to clarify what learners were doing wrong and discuss strategies to improve.

The global assessment statement on the FPs helped develop SRL by enabling students to:

- Compare themselves to an expected standard
- Reassure or identify areas for improvement
- Demonstrate progression

Firstly, the global assessment statement helped determine how well they were performing in relation to the standard expected for their level, by giving them "*a good judgement of current ability*". Final year students in particular liked this, as it compared them to the standard expected for a newly qualified FY1 doctor. It also made clinicians' feedback more useful by giving them a clear goal to evaluate against. However, if clinicians did not have a good idea of what that expected standard was, this judgement was less useful. Students also felt the global assessment statement was more acceptable and useful than a numerical grade for the task performed, because the meaning was clearer and more meaningful to them.

James Y5:

> *For me to act on it, to judge where I am, if someone gave me a score of 70 I wouldn't really know what to do with that. But if someone says well you're ready for work, I think that actually means something.*

Secondly, if marked at the level expected, the statement "*reassured*" them that they were on track and making adequate progress in certain tasks, identifying areas to improve and motivating them to focus learning and "*aspire*" to improve on these areas. This helped them to structure their time on the wards and motivated them to learn.

Linda Y5:

> But it's always good to get that reaffirmed if you are at the level that you should be…if someone says you're not ready yet, then gives you a red, then that's good motivation to, you know, see what you need to practise

Students who reviewed their previous FPs found it useful to see how well they had progressed with their competencies, especially if they progressed from amber to green during the attachment or throughout the year.

Rachel Y5:

> If you're getting cards in 3rd year you'll be getting cards in 4th year, because you'll repeat those things and you'll go oh yeah, I've actually improved on those things they told me about and that's quite helpful

In summary, a WPBA tool incorporating a global assessment statement helped develop self-regulated learning by enabling comparison of their performance to the standard expected, identifying areas for improvement and demonstrating progression.

18.6 Proactivity and motivation

Section 4 described students who were more proactive were more likely to approach clinicians and create opportunities to seek feedback. Proactivity developed as students became more senior.

18.6.1 The FPs increased proactivity in some students

In some students, the FPs increased proactivity by motivating them to do something they otherwise thought they were unable to do and would not have attempted. Students described them "*encourage you to practise*" tasks they may not have otherwise practised. Some students liked the freedom they gave them to choose what task to get feedback on, depending on what they thought would be helpful for their own learning. They also "*reminded*" them to ask for feedback and encouraged them to "*seek out*" or create learning opportunities they would not have otherwise created, be on the wards more and learn in the clinical environment instead of through reading alone.

Linda Y5:

> *You need to seek out a patient to examine or question or, you know, present...it*
> *kind of encourages you to go and see patients more.*

Questionnaire winter 2015

> *They do act as a trigger to do supervised tasks, learning to do a FY job...shifts the*
> *emphasis onto practical competence which I think is a really good idea (Y5)*

The list of tasks was useful, especially for junior students, by giving more direction with their learning, as some who weren't sure what to focus on practised fewer tasks due to lack of direction.

18.6.2 How the FPs decreased proactivity and changed to performance goal orientation

While the FPs increased proactivity in some students, especially if they were compulsory, others described becoming less proactive and even a change in attitude, which they attributed to using the FPs. The goal of their time on the wards moved from learning and developing competence, to feeling compelled to get enough FPs done to pass the module.

I explored this change from learning to performance GO in more detail in interviews and questionnaires. Some students declared they only approached clinicians and spent time on the wards to get FPs completed, claiming the FPs had turned them into "*postcard vultures*". Others spent time looking for tasks that were easy to get FPs completed for, rather than tasks that would aid learning, and even missed useful learning opportunities to get FPs completed. Once they had performed enough tasks to get the recommended minimum number of FPs completed, they felt they no longer needed to or lost motivation to be on the wards.

Furthermore, some only sought feedback on tasks they already knew they were competent at, making the feedback less useful. Sometimes this was because these tasks were the easiest to get observed and so get a FP completed on, such as venepuncture in year 5 (which was a year 3 skill). Other times it was because they were concerned about whether negative feedback would affect their progression, so only wanted to record positive feedback.

Clinicians also observed this change in GO and described students getting FPs completed "*for the sake of it*" on tasks they should already be competent at, rather than seeking feedback to aid learning.

Questionnaire winter 2015

> *it has turned attachments into 'getting the postcards signed off as soon as possible'*
> *- once they are signed off lots of people lack motivation as the 'jobs' we have to do*

are complete. Before the postcard system I felt more motivated to go and take as many histories etc. (Y4)

Dr H_GP:

The student was not interested in receiving feedback and as they had already gained their required number of post cards declined any feedback.

18.6.3 Need some proactivity to make the most out of a feedback seeking tool

While the FPs increased or decreased proactivity, students agreed that they needed a certain level of proactivity to begin with to use the FPs effectively. How the FPs were used by students or clinicians was what made them useful, not the tool itself. If students were less proactive, for example they did not seek or create learning opportunities, only used them for tasks they could already do or did not seek a credible feedback-giver, they were less useful. Similarly, reduced clinician proactivity also made them less useful, for example if clinicians were disinterested in supervising them or used them to give poor quality feedback.

Questionnaire winter 2015

Feedback cards are as good as you make them. If you use them with doctors you have worked closely with on a challenging task you will probably get good feedback. If you use them as a jumping through hoops exercise then they won't be useful. (Y5)

18.7 FPs led to wanting less autonomy

In section 4 I described a lack of autonomy reducing feedback seeking behaviour and increased autonomy increasing feedback seeking behaviour, by increasing opportunities to seek feedback. The FPs aimed to give students the autonomy to select what tasks they received feedback on, from whom and when, depending on what they perceived their learning needs to be. However, while many liked this freedom and benefited from it, others students described wanting less autonomy when using the FPs to seek feedback.

18.7.1 Wanting more guidance on tasks

Students wanted more scaffolding to structure their learning. In particular, many requested a set list of tasks to seek feedback on to help identify what they were expected to be competent at. When asked if a list of compulsory tasks were useful, out of 372 students, 39.4% perceived this to be useful while 46.9% did not (Questionnaire winter 2015, years 3, 4 and 5).

On further exploration, students felt a task list helped identify useful and relevant learning opportunities, set relevant goals and helping enable them to get supervision performing them. Some found it helped provide structure and focus to their learning on the wards.

Many students (in all years) only sought feedback on tasks they already could perform well and suggested that a set list of tasks would dissuade them from doing this. This is an interesting contrast to comments described earlier in this chapter about wanting to be treated as adults and finding the FPs "*patronising*". However, a list of tasks could be "*stressful*" if there were a large number of tasks needing completion, for example one module wanted 7 tasks in a 6-week attachment, which students found anxiety-provoking.

Questionnaire winter 2015:

> *I am constantly having to think and find opportunities to complete the postcards…a recommended list of tasks to complete in a module...gives us some guide on tasks we could try to gain feedback on (Y3)*

> *Give us a list of required tasks so we can't just ask for ones we're good at. (Y5)*

18.7.2 Wanting less autonomy on selecting feedback givers and when

Many also preferred clinicians to decide when to give feedback and to whom, so students could passively receive feedback rather than actively seeking feedback and selecting the feedback-giver. Some suggested dedicated timetabled feedback sessions with a dedicated feedback-giver preselected to complete FPs. This was because they found it intimidating to approach clinicians or felt clinicians were too busy to approach, so they didn't want to "*inconvenience*" clinicians by approaching them. From their experiences, clinicians who voluntarily delivered feedback tended to be more engaged and so the feedback was more useful. They also felt that if the onus was on clinicians selecting when to give feedback, this would motivate them to perform better to impress the clinician.

Sally Y5:

> *If you gave it to the other person, I want to impress that person. The onus and the dynamic starts to change. I feel like it's making it their responsibility. So I think if they have the responsibility, they have my form. It's not about me chasing behind them.*

This was an interesting solution to the original problem of getting insufficient useful feedback in attachments. While this could bypass some of the barriers to feedback seeking described in section 4, this was only a theoretically possible to implement. Students thought the medical school could "*make*"

clinicians fill in FPs and give useful feedback, make the FPs "*compulsory*" for teaching staff to complete, expect clinicians to take responsibility for this and enforce it. As described in section 4, clinicians' roles were split between education and service and many did not view delivering feedback as a significant part of their role. "*Forcing*" clinicians to deliver feedback in this way would be unlikely to be successful. Senior students resented being compelled to complete FPs because they had to rather than wanted to, but they also wished clinicians to feel compelled to complete them.

Questionnaire winter 2015

> *Give them to the consultants and make them the ones who have to approach us rather than the other way round…it is very intimidating having to approach them to ask for their time (Y5)*

> *Issue them to teaching staff and make ALL staff aware that they must be filled in (Y4)*

In summary, introducing a feedback seeking tool led to students wanting less autonomy in what to seek feedback, on, when and from whom, due to fear of approaching clinicians, worry about clinicians' workload and being uncertain what they were supposed to learn. Many suggested that clinicians should decide when to deliver feedback and to who, rather than students actively seeking feedback.

18.8 Students did not feel they were being treated as adults
18.8.1 FPs increased feelings of lack of trust

Introducing the FPs gave me a new insight into the culture in the clinical environment. Many clinicians' comments suggested that they did not always trust students to behave professionally. For example, they voiced concerns that students would only approach clinicians who would give positive feedback, would wait until the end of the module when they were already competent at tasks or would intentionally "*lose*" any FPs containing negative feedback. One MO insisted the FPs were numbered before agreeing to implement them into his module so any missing FPs could be identified. We therefore numbered them in all modules to preserve clinician engagement.

Dr D_Hospital:

> *if you're having a run of bad feedback you might lose a few cards …I'm sure you'll get people saying, oh, I lost 10 cards, or I don't know what I've done with them, or, you know, my house got flooded, my bag got stolen.*

However, students picked up on feelings of not being trusted by clinicians or the medical school, and the way I implemented the FPs reinforced these feelings. Many felt the FPs removed autonomy and

"*patronised*" them, instead of treating them like adult learners. They described them as "*antagonising*" and felt that they demonstrated they were not trusted to behave professionally like junior doctors.

Questionnaire Winter 2015

> *If you don't trust us or FY1/2's at this stage of our career you're not treating us like the professionals you expect us to be. (Y5)*

> *I am a professional young adult working in an environment which frequently encourages teaching of others…if I need feedback I will happily ask for it in person…they are patronising- I do not need someone checking up that I am getting feedback. (Y4)*

Dr H_GP*:*

> *He and his friends felt it demonstrated a lack of respect and professionalism by putting out the message that that they can't be asked to get the feedback themselves*

18.8.2 Students' perception of postgraduate life

While feelings of lack of trust may certainly be a reality, as demonstrated by some clinicians' comments, the other reality is that all doctors need to demonstrate developing and maintaining competence until retirement, in the interest of maintaining patient safety and the trust of the public. For example, in postgraduate training, doctors must complete a set number of WPBA to progress their career and some of these WPBA designs are similar to the FPs.

However, students were unaware that WPBA formed part of postgraduate training, describing being "*fed up*" of them already. They also disliked having to reflect on the FPs and compile a portfolio of activities they had been signed off on, all activities which are part of postgraduate training, because they felt it reduced their learning.

Questionnaire, Winter 2015

> *I am fed up with having a tick box education, constant boxes to tick in order to progress and more often get in the way of learning (Y5)*

> *It is almost detrimental to the organic learning process, I'm afraid. Why do we have to have forced upon us introspection, portfolios and feedback cards?! (Y4)*

Unfortunately for these students, these activities are compulsory in postgraduate learning in the UK until retirement, indicating students had little insight into what postgraduate training is like and why these tasks are relevant. How students can accept the need to demonstrate competence in the interests of patient safety and maintaining public trust, without detrimental effects on motivating and learning, is an area for further work. However, better communication to address this concern may have helped.

18.9 Sense of belonging

Increased sense of belonging and developing relationships with clinicians increased feedback seeking behaviour as it increased students' confidence and students were more likely to volunteer or be asked to perform tasks and felt more comfortable approaching clinicians to seek feedback (section 4).

However, some students felt the FPs worsened relationships with doctors. If they approached clinicians with FPs before they had developed relationships, they were far less likely to be successful and though clinicians found them "*annoying*". Students also felt the FPs did not help overcome the feeling that they were sometimes unwelcome on the ward, feeling the FPs made them even more of a "*nuisance*" or "*inconvenience*", which damaged their relationship with clinicians and made them irritated with them.   While the FPs did not promote integration, already having a relationship encouraged students to use FPs to seek feedback and they were more likely to be successful.

Darcy Y5:

> *I feel like the presence of the postcards doesn't change anything if the team is not willing. Or does not really want you there…it doesn't change anything. But then if they did want you there, if they did include you, you've got the feedback anyway*

However, some students described the FPs encouraging them to proactively develop relationships to help integrate into the clinical team and get to know them, so they could successfully get a FP completed. In particular, they encouraged them to develop relationships with other health professionals. They found if they did not spend enough time with them, feedback seeking attempts would be unsuccessful or the feedback would be less helpful. Getting FPs completed by other health professionals, such as nurses and phlebotomists, gave them insight into how they fitted into the clinical team, which is essential when practising as a doctor.

Annabel Y5:

> *I'm expecting to get a feedback card signed- that means I have to at least be really good and stay for the entire four five hours...That means that automatically the*

nurse gets to know you. I have to know that the nurse knows me well enough to do the feedback card, you can't just stay for a minute and say, okay, do this, because she's not going to do it

Sue Y5:

I do think it is excellent the Feedback Postcards generally can span on all the different people that are working in the hospital…I've met more welcoming nurses and pharmacists. So you get to know more of the team generally.

In summary, the tool itself did not improve and sometimes worsened relationships with doctors, but encouraged students to develop relationships with other health professionals, which they would not have otherwise done, gaining more insight into their role in the healthcare team.

18.10   Stress of learning

Other demands of the module impacted on students' engagement with the FPs and they described many other stresses on their time and learning. For example, some modules had compulsory workbooks or essays in addition to FPs. Students also had summative exams at the end of most modules (now changed to formative). Hence, they felt the FPs added "*a layer of stress to an already stressful course*" and perceived the number of FPs to be "*an unfair goal to complete*". They worried more about getting the required number completed rather than aiding learning and described them as "*stressful*", "*bureaucratic*" and a "*burden*", so did not engage with them

Furthermore, during some attachments, students did on-call shifts shadowing junior doctors. Some understandably found this tiring, as do junior doctors. As a result, they were too tired to get a FP completed and have a useful feedback conversation on the tasks they had completed.

Lisa Y4:

It's just, like, another hoop that we have to jump through and there are already so many of them. Like you've got another handbook as well that you have to get signed off and filled in. And then you've got the feedback postcards on top of that.

Jim Y5:

…staying 5 hours late, you know, it was just horrific. And I think once you get to that stage, you've spent all your day. You've done your time and more. You just want to go home. You don't want to hang around to get your form signed.

In contrast, when the FPs replaced other compulsory requirements of the module, such as miniCEX forms, instead of being used in addition, some preferred the FPs because they were faster and easier to complete. Their small size them helped stop students from feeling overwhelmed.

Becky Y5:

> *They seem to make it easier, you don't have mountains of paperwork to go through, you could potentially just have one little piece of paper to give to a member of staff and that was all.*

In summary, students found the FPs stressful when they already had other requirements and stresses on learning, such as revising for summative exams and being on the wards, so they often lacked energy to engage with FPs as well and found they added to existing stresses.

18.11   Summary

In summary, introducing a formative WPBA tool reduced fear of feedback seeking, increased or decreased fear of clinicians, increased confidence and proactivity in younger students, increased SRL and promoted proactivity for some students. However, in other students it drove them from a learning to performance GO, increased fear of clinicians and reduced feelings of belonging and increased students' stresses of learning and feelings of lack of trust.

I will now explore how the WPBA tool impacted on extrinsic barriers.

19 Extrinsic barriers: How did a feedback tool impact on clinician and environmental barriers to feedback seeking

19.1 Introduction

Earlier in this thesis I explored the barriers and promoters to students seeking feedback. The overarching aim of implementing the FPs was to help students overcome the barriers to feedback seeking and promote earlier development of feedback seeking behaviour. The previous chapter in this section discussed the impact of the WPBA on intrinsic barriers. This chapter will explore if and how they helped overcome extrinsic barriers relating to clinicians and the environment.

The clinician barriers to feedback seeking are summarised in the concept map below, recapped from section 4.
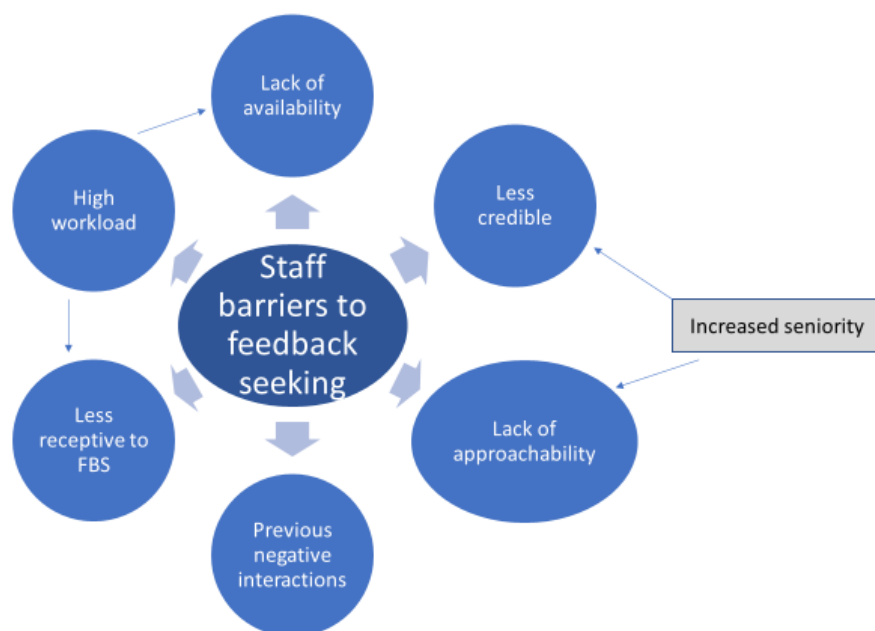
19.2 High clinical workload

Section 4 described students feeling clinicians didn't have time for education due to clinical commitments and other pressures on their time. Clinicians also described this conflict.

Certain aspects of the FP design helped overcome this barrier, such as the small size which only had room for short snippets of feedback which students could collect multiples of over time. Students liked the brevity because it did not take much time, so allowed them to get feedback immediately and stopped clinicians from feeling overwhelmed. They were therefore felt to be less "*hassle*" than the miniCEXs they replaced. As discussed earlier, students now felt they had "*a right to ask*" for feedback even when they saw clinicians were busy, giving them the confidence to try to overcome this barrier.

Y5 Questionnaire 2014:

> *They were particularly useful for quick feedback…I feel that this feedback system is rather well thought out. It provides very quick assessment as well as prompt feedback.*

However, other students and some clinicians felt they were still time consuming to complete, so clinicians were still reluctant to complete them and students were less likely to continue asking. Some clinicians were irate by how time consuming they found them, as they already felt overwhelmed by their other commitments and perceived the FPs were imposed on them. In addition, GPs felt providing written feedback duplicated the feedback they already gave with little additional benefit. GP practices already had a feedback system in place where students received face to face feedback discussions and written feedback throughout the attachment, which they felt was more useful as it allowed more detailed feedback to be written.

Clinician questionnaire 2014:

> *They cannot just unilaterally impose more work on consultants who have no protected time for teaching. We are expected to teach the students and get no feedback and communication until yet another task is inflicted on us …We have enough to do …where exactly do Faculty think that extra time is coming from?*

Students still felt clinician were "*too busy*" to ask for feedback, especially as written feedback took longer than verbal feedback, so they felt they were imposing even more with the FPs. They also felt clinicians were too busy to provide learning opportunities, such as direct observation of tasks in order to get feedback and get a FP completed. They felt they had to pester and nag clinicians to observe them, using terminology such as "*harass*" and "*chasing*". However, clinicians felt the compulsory element made them more likely to complete them.

Darcy Y5:

> *You have to ask for someone to sign something. It makes it less likely when you feel like your chasing someone. I feel we all feel uncomfortable doing that. We know that people are busy.*

Dr K_GP:

> *You would probably struggle if it wasn't some kind of compulsory [tool], because actually, you know, there's so many demands on your time…compulsory sounds quite draconian, but there might have to be an element of that for you to get useful feedback*

Some clinicians asked students to return at a later time when they would be less busy. However, students found this difficult because they felt the clinician had more important priorities than observing them. In general, they felt less important in the clinical environment that clinicians' other commitments, sometimes to the extent that they felt unwanted or "*in the way*". They viewed clinicians completing FPs and teaching them as a favour, rather than as part of their role.

Questionnaire winter 2015:

> *Many doctors were very busy and I felt silly coming back to ask for a feedback postcard to be filled in at a later date when they have more important things to be doing. (Y4)*

In summary, some students and clinicians felt the FPs were less time consuming to use for giving feedback than previously used tools so valued their relative time efficiency. However, many still thought they were time consuming. Students struggled to find clinicians who had time to observe them perform tasks and complete FPs, and felt uncomfortable chasing them because they perceived they were of lower priority than their other commitments. So the FPs did not help overcome the barrier of high workload, but made it more obvious to students that clinicians had little time for them and they were lower priority.

19.3 Selecting a feedback-giver

Students often found it challenging finding clinicians available to observe them, provide teaching and complete FPs. Lack of senior clinician availability was one of the several reasons students preferred to seek feedback from junior doctors (section 4).

To some extent, the FPs helped overcome this barrier by facilitating direct observation of tasks students would otherwise not have been supervised doing, and for some tasks would not have therefore been allowed to practice doing without supervision. Students attributed having a formal

tool to improving the level of observation they received, and felt compulsory FPs encouraged clinicians to make themselves more available to provide teaching, where previously they experienced resistance from clinicians.

Sandra Y4:

> I think it's easier now they're compulsory. I think in the past, I had an experience where, like, consultants would just say no. But now if you're like, I have to get so many done, usually they're a bit more willing.

Students preferred to seek feedback from junior doctors because they were more available, more credible and they valued their feedback more (section 4). However, many clinicians raised concerns about students only sought feedback from very junior doctors who, they felt, would not be at the level of experience required to deliver useful feedback. So to preserve clinician engagement and acceptability, we stipulated that Y5 students could not get FPs completed by foundation doctors and had to get a certain proportion completed by consultants. Unfortunately, this worsened this barrier, making the FPs harder to complete and the resultant feedback less valuable. Lack of clinician availability also drove students to get feedback on quick tasks which they had more opportunity to be observed performing, regardless of learning value, even if they were already competent at them.

Y5 Questionnaire winter 2015:

> This rule [half of FPs need to be completed by consultants or registrars] limits opportunities for feedback. This a shame as I think foundation doctors are in many ways in a better position to provide feedback on performance in tasks - such as cannulation, scribing during ward round, clerking a patient, which they themselves do every day."

Interestingly, quite a few students circumvented this barrier by seeking feedback from other health professionals such as nurses, phlebotomists, pharmacists and midwives. The FPs encouraged them to seek feedback from other health professionals, which they valued because it gave them a different perspective and increased their learning opportunities.

Steve Y5:

> ...because it's learning from the pharmacist about things has been really good, and speech and language therapy and the nurses. And physiotherapists. I think that's very good

In summary, some students found the FPs increased feedback-seeking because they were compulsory and so were more likely to successfully seek feedback, or they encouraged feedback seeking from other health professionals. Others found lack of clinician availability remained a significant barrier which was worsened by how the FPs were implemented. They felt they were not allowed to seek feedback from feedback-givers they perceived had the most credibility and so receive the most valuable feedback, making them reluctant to seek feedback.

19.4 Clinician approachability

Students were more likely to approach clinicians who were approachable, and they perceived junior clinicians to be more approachable than senior clinicians (section 4).

As described earlier in this section, students found it easier to approach clinicians using the FPs because the FPs clarified that clinicians are supposed to provide feedback and seeking feedback is an expected behaviour from students. Clinicians and students described the FPs as tool which made clinicians do something they would not necessarily have wanted to do, describing clinicians being "*forced*" or "*obliged*" to provide feedback. Many also thought it improved feedback quality because clinicians put more thought into delivering feedback using the FPs.

Questionnaire winter 2015:

> *When they are mandatory and require a written response, staff are much more willing to give feedback and, in my opinion, put more thought into comments. They also give me more confidence to ask for feedback, as they legitimise my request. (Y5)*

As described earlier, many students favoured a compulsory tool because they gave confidence to approach clinicians and deflected hostility towards the medical school, increasing chances of success. However, the FPs sometimes increased clinician hostility if they felt stressed or time-poor.

In summary, FPs helped some students overcome their perception of clinician unapproachability by providing clarity that this behaviour that was expected from students and clinicians, deflecting hostility towards the medical school. However, some felt the FPs worsened hostile responses and experiencing these negative reactions made them reluctant to seek feedback again.

19.5 Clinician receptivity

When clinicians were more receptive to feedback seeking, they were more likely to encourage feedback seeking behaviour and deliver useful feedback, which promoted further feedback seeking

(section 4). The concept map below is a recap.

Professional identity as an educator
Fewer other priorities (patient care, trainees, own appraisal)

Context

Perceiving students as proactive
self-regulated learners or learning
GO learners

Positive
perception
of fbs

Increased staff
receptiveness
to fbsb

Encouraging
fbs

Delivering
useful fb

Increased
fbsb

Staff
intrinsic
factors

Sufficient training on giving feedback
Feeling they are able to provide fb effectively
Not feeling students are more qualified than them
Recognising FBSB

19.5.1 Helped clinicians deliver more useful feedback

Many clinicians lacked confidence and so avoided giving feedback. The medical school and postgraduate deanery had regular sessions on delivering effective feedback. However, like all medical schools, not all clinicians engaged with or had time to attend training. Fortunately, many students and clinicians described the FPs improving feedback. They "*reminded*" clinicians to deliver feedback, helped them to structure feedback into positive and constructive comments and give more thought to the feedback delivered. Clinicians also appreciated the fact that they enabled them to provide "*prompt, face to face*" feedback immediately after observing a task, and many comments on the project FPs collected at the start of the pre-pilot cycle referred to them being quick and easy to complete.

Questionnaire winter 2015:

> *I think that providing us with a physical card encourages tutors/doctors/ other*
> *healthcare workers to give feedback and give more consideration about ways to*
> *improve (Y3)*

Section 4 described students feeling they did not receive honest feedback and clinicians worrying about how to provide constructive feedback effectively without upsetting students. Clinicians felt the FPs gave them confidence to deliver constructive feedback to students because they could deliver it immediately, along with feedback on how to improve, and the student asked them for it so they felt they had permission to offer it. However, students still thought clinicians did not give honest feedback,

especially when completing the global assessment statement, because they thought clinicians found it "*stressful*" or did not have enough training, describing clinicians as "*reluctant to deliver anything but a green*".

Dr E_Hospital:

> *In some ways the postcards makes it a little bit easier to say critical things, but a global thing at the end saying you're critical… you could then tell the student right away where there was a problem and how they should improve.*

Hospital clinicians also found that multiple pieces of feedback helped them supervise the student as they could build up a general picture of the students' performance using other clinicians' feedback in their end-of-attachment discussion.

In addition, the FPs raised awareness that students wanted to seek feedback and helped recognise feedback seeking, which made some clinicians more receptive to their attempts. Some even initially approached students to let them know they could ask them for FPs, which encouraged students to approach them.

J_Nurse*:*

> *Just now, having an awareness that they do look for a lot of feedback, if I were to do a clinical shift, because I've got an awareness for this I could say, if you're looking for feedback on anything this afternoon, let me know.*

19.5.2 Many clinicians still gave unhelpful or no feedback

An equally large proportion of students felt they continued to get unhelpful feedback despite using the FPs. The FPs may have helped create more opportunities for feedback but this feedback was unhelpful, so these opportunities were not of any use. If clinicians did not or could not provide useful verbal feedback, this feedback was not made any better by writing it down. Students appreciated that if a clinician was not engaged with feedback and had "*no interest*" or "*didn't care*" about giving feedback, a tool could not help overcome this. Students did not consider this to be feedback because of poor quality, but clinicians were labelling it as feedback so they could say that students now received feedback, as a "tick-box" exercise.

My review of comments on the FPs confirmed that many feedback comments were brief, non-specific and generic (as described in section 5), with some FPs containing no comments at all and merely a signature.

Annabel Y5:

She wrote on the feedback card needs more practice on venepuncture. I just tend to ignore it as I am practising…it's just that sometimes they write things just for the sake of it, just to complete a feedback card.

Some felt they still didn't receive honest feedback if they felt clinicians feared upsetting them, or the clinician tried to compensate for lack of engagement with teaching. They thought some clinicians gave positive feedback so they wouldn't complain about lack of teaching.

Sue Y5:

We never saw our tutors so they gave everyone a green, because they want to make sure no one is going to complain about it, because we don't get any teaching, you get a green because they don't want anyone to know

Others students described procrastination from clinicians until there were no longer opportunities to get FPs completed, or clinicians taking them away to complete and not returning them. Some recalled times they performed tasks but were not given feedback when asked, even verbally.

Not all clinicians perceived teaching students to be part of their role, or viewed it as low priority. The FPs also did not overcome this barrier and some students described clinicians refusing to complete FPs because they did not think teaching was part of their job.

These unsuccessful attempts made them more reluctant to continue using them.

Jim Y5:

Well it turns out they had apparently lost the cards. But I think they had just binned them. And therefore, you know, I was put off by that. I didn't want to ask them for any feedback because I thought, well if they can't be bothered then neither can I.

Y4 Questionnaire winter 2015:

Sometimes doctors say they are not involved in the university so don't fill them in…there are a number of consultants giving rude remarks of students disturbing them

The previous chapter also discussed negative clinician responses to being approached with a FP. Students felt the FPs made them place themselves in a position where they would receive negative reactions or be unsuccessful without having autonomy to stop this.

In summary, the FPs increased clinician receptivity by helping clinicians structure feedback and reminding them to provide positive and constructive comments, giving them permission to deliver constructive feedback with less fear of upsetting students and helped them identify feedback seeking attempts. However, in some cases they just highlighted lack of useful feedback and the need for better clinician training to provide more effective feedback, or improve engagement with FPs and teaching students in general.

19.5.3 Design and implementation of the FPs

While some students and clinicians thought the design of the FPs encouraged them to approach clinicians without feeling overwhelmed, others found that the design discouraged them. GPs felt they were too small to write sufficient useful feedback so felt they were too restrictive to be helpful, describing them as a "*tick box*" exercise which "*dumbing down*" feedback. Very junior doctors were reluctant to complete them because they had to record their GMC number, so they worried that anything they wrote could have repercussions. This was in spite of explaining that the GMC number was used to cross-reference spellings of names to accumulate evidence for appraisals.

Sally Y5:

> *I've had people refuse to sign it because they are worried about putting something so official as their GMC number down. They're like, I don't know what it is, I don't want to put my number down. You should ask someone else.*

19.5.3.1   Clinicians and students preferred verbal to written feedback

The FPs were designed to record a verbal feedback conversation. However, students found it challenging getting clinicians to write their conversation on the FPs. Many described receiving useful verbal feedback, but the corresponding written feedback was brief, non-specific, "*hastily written with poor comments*" and therefore unhelpful. In some cases, clinicians refused to write any feedback at all because it was time-consuming, they did not engage with the FPs or the student felt they lacked skills to deliver written feedback. Some students described receiving helpful verbal feedback but poor-quality written feedback. Students therefore preferred verbal feedback as it was faster and more helpful.

James Y5:

> *I've had some tutors say well I don't think this [the FP] is very helpful. And when it comes down to why, I think they prefer to give feedback just to talk. And actually, as long as they're a good teacher, that would be fine from my learning point of view, for someone just to talk*

19.5.3.2 Implementing the FPs reduced clinician autonomy

Despite involvement of SMLs, MOs and year leads in designing and implementing the FPs, many clinicians felt this was imposed on them and they had no choice. They felt they had to now complete them if they taught students, but did not feel they had any input into how they were designed or implemented. Furthermore, clinicians who led undergraduate teaching in their department now felt they had to engage their colleagues to complete them as well, which some found challenging.

Dr H_GP*:*

> *I think it's just pushed under your nose…one or two people in the practice can't do*
> *it. It needs to be everybody on board to do it, and I have to persuade my colleagues*

They also worried about other pressures on their time and whether they had time for the FPs on top of other commitments. Additional forms made them feel overwhelmed.

19.6 Opportunities to seek feedback

The FPs could be used for short tasks, which increased opportunity to seek feedback as many students found it challenging getting clinicians to observe them for prolonged periods of time. This made them easier to seek feedback, for example for doing parts of examinations in clinics.

However, many still found it challenging finding opportunities to be observed in busy environments. They tried to get them completed during timetabled teaching sessions, but sometimes these sessions were cancelled. More proactive students overcame this by seeking opportunities on wards.

Sue Y5:

> *I quite like the feedback cards because I love attending clinics…in the clinics you*
> *don't have any time, but just sitting observing, asking questions, you know, talking*
> *to the patient, giving advice on this medication or the pill or whatever*

The unpredictability of the clinical environment remained a barrier. Clinicians were keen for students to seek feedback before performing a task, so they could observe them closely to think about what feedback to give. However, students didn't always know if they were going perform a task, so felt they couldn't ask in advance. Furthermore, as is the nature of hospitals, patients became unwell unexpectedly. While students did not resent this barrier, it still prevented the clinician from completing a FP if they had to attend an emergency instead. They also still found it uncomfortable to seek feedback in front of patients, but found if they asked when the patient had left, the clinician did not want to complete a FP because they were supposed to ask beforehand.

Questionnaire Winter 2015

> *I have been asked to carry out a task e.g. speculum examination in front of a patient, and it has not felt appropriate to ask about filling in a feedback postcard at that time. This meant that I could only ask afterwards, and some staff have then refused because on the postcard it is written that we are meant to ask beforehand. (Y4)*

19.7 Summary

In summary, the FPs helped students overcome some clinician barriers, such as approachability and feeling intimidated by clinicians, by empowering them with a formal tool to give them the confidence to approach clinicians and deflect hostility to the medical school. Unfortunately, they also exposed students to more clinicians' refusal and rejection because students were now compelled to approach clinicians to complete sufficient FPs to pass the module. Many clinicians also worried about how time-consuming they were. The FPs overcame some difficulties of lack of clinicians' confidence and training by helping improve the quality of feedback delivered, and encouraging clinicians to deliver more honest feedback when asked. However, if clinicians were not engaged, they continued to deliver poor quality or even no feedback and the FPs made little difference other than highlighting this. Students felt the value of the feedback was reduced by not being allowed to seek feedback from very junior doctors, who were the most available and most credible. This made the FPs less useful. While the FPs allowed students to take advantage of some opportunities to seek feedback, students still found the unpredictability of the environment a challenging barrier.

20 How does a feedback tool impact on feedback barriers to feedback-seeking

20.1 Introduction

The previous chapters explored how a formative WPBA tool impacted on intrinsic, staff and environmental factors which promote and inhibit feedback seeking. This chapter discusses its impact on the feedback factors described in section 4. To recap, these factors are summarised in the concept map   below.
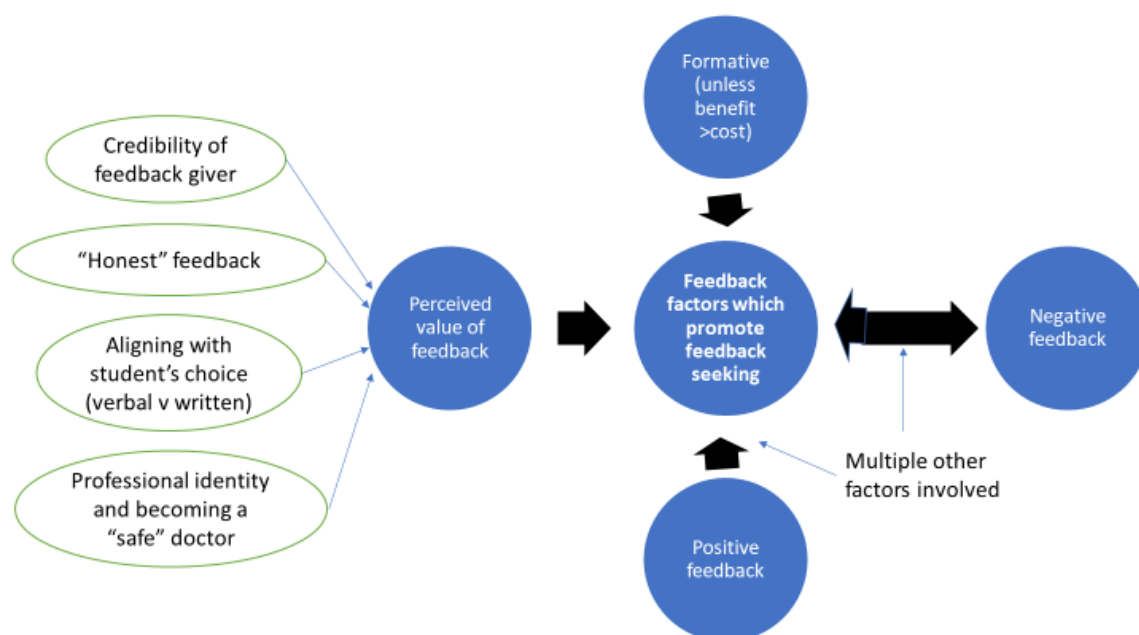
20.2 Summative, formative, compulsory or optional

Section 4 described students being more likely to seek feedback if they perceived it was formative, unless the benefits outweigh the costs.

When the FPs were implemented, they were mostly formative (the student did not have to pass the task but needed to get a set number of FPs completed to pass the module). 74% of years 3, 4 and 5 students reported they preferred no pass or fail mark (Questionnaire winter 2015), which I explored further through interviews.

They preferred a formative tool because they found it comparatively less stressful. A summative tool drove them towards a performance GO by increasing the perceived cost of feedback seeking. As a

result, students were reluctant to attempt more difficult tasks if they risked failing, and were less likely to attempt tasks to improve. They also worried about drawing attention to their weaknesses to "*point out what I didn't do well*".

However, despite the content of the FPs being formative, many students were still sceptical about whether they were being used summatively and worried that negative feedback would count against them.

Darcy Y5:

> *I'm scared to ask for feedback on something that I'm not very good at, because it's written and it's submitted. You're not really sure where they count…so I think I will get a postcard on that tomorrow when I am more comfortable with it*

Unfortunately, while they were introduced as a formative tool, some clinicians and administrators used them for unintended summative purposes, including assessing engagement and attendance, delivering end-of-module grades and discussions at exam board meetings if students performed poorly in their exam. Students were aware of this.

Despite some clinicians deviating from the original intended use of the FPs, clinicians attributed students asking for feedback on tasks they performed well as being due to students viewing them summative, rather than other clinicians using them summatively. Some clinicians were extremely concerned about students only seeking positive feedback, described as "*cherry-picking*", and worried the student would get a distorted perception of their performance.

Dr E_Hospital:

> *if the student was doing this inappropriately, asking after a successful examination, not bothering to ask when things haven't gone quite so well, then you could get the impression that this is someone who is really doing very well, when they weren't.*

While some students felt compulsory FPs gave them confidence to approach clinicians and deflect clinicians' hostility, and increased chances of successfully seeking feedback, as described earlier, others found compulsory FPs reduced their engagement and enjoyment by reducing their feeling of autonomy and driving a performance GO (also described earlier).

20.3 Perceived value of feedback

Students were more likely to seek feedback they perceived would be valuable (section 4).

Students preferred receiving verbal over written feedback as they found it more detailed, more useful and took less time, and clinicians preferred to deliver it verbally (chapter 19). They also struggled with the legibility of written feedback.

In particular, they found some of the written feedback brief and unhelpful, such as "*more practise*", "*good*" and "*continue to practise*". Sometimes students did not understand the message the feedback-giver tried to convey, reducing its value so they were less likely to utilise it. However, others did not mind receiving poor-quality written feedback as they viewed the FPs as a way to initiate feedback conversations. These students described getting more useful verbal feedback with the FPs.

Sue Y5:

> *sometimes I don't reflect on feedback, because sometimes I find feedback, some people giving feedback that's too generic… Like say you saw appendicitis…Like how do you improve on appendicitis? I don't have it, the patient has it.*

Rachel Y5:

> *for me the most useful thing about them is the discussion you have while they're getting written…it's more the fact that they facilitate that discussion than actually having the piece of paper*

20.4 Summary

In summary, there was no clear solution to whether compulsory or optional FPs were better. While many preferred a compulsory tool to aid confidence and "*back-up*" feedback seeking requests, other students found they increased stress, decreased autonomy and drove them towards a performance GO. Clinicians also disliked being compelled to complete FPs, though some acknowledged they would probably not have given feedback (or given less helpful feedback) without them. Students perceived the feedback to be less valuable than verbal feedback they received alongside it, and the restrictions on who they could select to give feedback reduced the perceived value further. Students preferred a formative tool, but even when this was implemented, they still perceived it to be summative. This was in part because some clinicians were using them summatively.

21 Discussion and Conclusions

21.1 Introduction

Section 1

Feedback improves learning and performance but learners (including students at EMS) feel they do not get enough feedback

There are a number of challenges with receiving and giving effective feedback and feedback-seeking can help overcome these feedback challenges. Despite this, students do not often seek feedback, with junior students seeking less feedback than senior students

Overall Research Question: How can we promote development of feedback-seeking behaviour?

Section 2: The influences of FBSB in medical education are poorly understood. There are few high quality studies supporting any interventions having an impact on FBSB

Aim: To develop an understanding of the influences of feedback-seeking in undergraduate medical education and how we can promote it.

1. To explore what motivates learners to seek feedback in the clinical environment and explore the barriers that inhibit feedback-seeking behaviour

2. To explore if a formative WPBA tool can help learners overcome the barriers to feedback-seeking described in the first aim.

Section 3: Charmazian Grounded Theory study using data from staff and student interviews and questionnaires and minutes of staff meetings

Section 4: FBSB is influences by intrinsic, extrinsic (staff and environmental) and feedback enablers and barriers

Section 6: The impact of a formative WPBA tool on FBSB

Section 5: Designing, developing, implementing and evaluating a formative WPBA tool

The overarching aim of this thesis is to develop an understanding of the influences of feedback-seeking. I have used grounded theory, collecting data from student and clinician interviews and questionnaires, to explore the influences, enablers and barriers of feedback seeking behaviour in the clinical environment and explore the impact of a formative WPBA tool on these barriers.

In this final chapter I will summarise my findings addressing these aims I will discuss how my findings contribute to current knowledge and consider other ways an organisation can help learners overcome barriers to feedback seeking and promote development of feedback seeking behaviour earlier, with a list of practical suggestions arising from students and clinicians. Finally, I will consider the strengths and limitations of this research and my own reflexivity.

21.2 Addressing Aim 1 of my research question

Aim 1: To explore what motivates learners to seek feedback in the clinical environment and explore the barriers that inhibit feedback-seeking.

I have answered this aim

I have discussed that feedback-seeking increases as students progress through the course. This is supported by my preliminary quantitative questionnaire (section 3.2 in figure 4: Self-reported feedback-seeking in years 1, 3 and 5 in EMS) and two UK studies (Bowen *et al*., 2017; Murdoch-Eaton and Sargeant, 2012). However, my study contained qualitative data from only one year 3 student and two year 4 students. To explore how feedback seeking develops in more detail, in addition to these students I have used retrospective reflections from the remaining year 5 students. A limitation of this research is that my conclusions would not be as robust as they would have been if I had included more students from earlier years. I would also have ideally liked to include students from years 1 and 2 in my data collection to help confirm these findings. However, I did not recruit student from the first two years because they had significantly less exposure to the clinical environment and their exposure was almost entirely based in GP practices with very little in the hospital environment. Al-Mously (2014) found that more senior students sought less feedback than junior students, while Murdoch-Eaton (2012) and Bowen (2017) found the opposite is true. My findings confirm the findings by Murdoch Eaton and Bowen. It is worth noting that Al-Mously's study was set in Saudi Arabia while my research study and Murdoch-Eaton's and Bowen's were set in the UK. The impact of cultural differences on feedback-seeking behaviour has been described in research in organisational psychology (Morrison, 2002). Al-Mously also used different methodology and data collection methods, using a questionnaire collecting mostly quantitative data using Likert scales. Their study contained more males. Although they included 110 students in total, their comparison groups only contained 50 students in sixth year and 60 students in 5th year. Such small numbers in a quantitative study cast doubt on the significance of their findings.

My research found that clinician approachability was a significant extrinsic promoter of feedback-seeking (section 11.2) and lack of approachability was a barrier. Clinicians were viewed as being more approachable if they were junior, did not appear too busy to teach and were more welcoming of students. Students also preferred feedback from clinicians they had developed relationships with through shadowing them for longer periods and being observed performing more tasks.

The culture of the clinical environment also impacted on feedback-seeking (section 11.7) with students describing feeling out of place and as if they didn't belong, feeling like they were entering

clinician's territory. This reduced their tendency to seek feedback. In contrast, feelings of belonging made them students more likely to seek feedback. Other studies have also found that a culture where the feedback-giver is approachable and friendly will encourage feedback seeking (Milan *et al*., 2011; Teunissen *et al*., 2009; VandeWalle *et al*., 2000). Interestingly, Ramani (2018) found that a culture of "politeness" reduced learners' tendencies to seek feedback because they felt they were less likely to receive honest feedback. Students in my study did not describe polite behaviours from clinicians, such as being acknowledged, referred to by name and welcomed, as an inhibitor of feedback seeking. In fact, these behaviours were felt to be welcoming and promoted feedback-seeking. This discrepancy might be because Ramani's study was conducted on trainee doctors, who already worked in the clinical environment. They therefore already felt a sense of belonging in the workplace and already had a role in their team. They were also placed within the team for longer rotations than our students were. Hence, the participants of Ramani's study had less need to feel welcomed by senior doctors. Our students had not yet developed any relationship with clinicians and had not yet integrated into the team, so polite behaviours such as being welcomed was important for them and promoted feelings of belonging, as described in section 9.2.3. As with Ramani's study, I found that students placed importance on honest feedback (section 10.4.2), which they found more valuable.

In section 10 I have discussed how students consider the benefits and costs of seeking feedback, influencing their decision to seek feedback. Benefits included receiving feedback which could potentially improve performance, especially if they were underperforming in a task, receiving honest feedback and receiving feedback on a task which was important to perform well to be a safe doctor. Costs included the potential to receive negative summative feedback or feedback which they viewed as a summative judgement, for example telling them they had failed a task. This could impact on their confidence, identity as a soon-to-be junior doctor and on their self-esteem. Other costs included rejection when asking to be observed, receiving no feedback, unhelpful feedback or a negative interaction in response. My findings are supported by previous studies, such as Teunnissen (2009), Bing-You (2018) and Bok (2013), which also described learners seeking feedback if the benefits outweighed the costs. Mann (2011) describes the tensions between the desire for feedback and the costs of being told they are not performing at the level they thought they were. Eva (2012) describes the impact of the cost of losing face in front of others on the decision to seek feedback and Ravik (2017) described the desire to be a safe clinician as a driver to seek feedback and overcome the costs of feedback-seeking.

21.3 How a formative WPBA impacts on feedback-seeking
Section 6 explores the impact of a formative WPBA tool, the FPs, on feedback-seeking behaviour.

The FPs increased students' confidence to seek feedback and acted as an extrinsic motivator to overcome their fear of seeking feedback and fear of clinicians. They supported and empowered students by clarifying this was expected behaviour and deflecting hostility away from the student. This enabled their confidence to overcome fear, which in some made the difference between actually seeking feedback and wanting to seek feedback but finding barriers of fear and unapproachability too overwhelming.

However, other students continued to experience negative reactions from clinicians, which the FPs aggravated. They also worried about clinicians' perceptions of them, thinking they were needy because they wanted feedback. This increased fear of clinicians, tipping the balance between fear and confidence. For these students, a tool did not improve confidence but now they had to put themselves in anxiety-provoking situations to complete the required number of FPs. They were now "*forced*" to seek feedback to pass, rather than doing so because they wanted to in order to improve learning.

Students identified that using a tool earlier in the course could have helped development of feedback seeking behaviour. Firstly, it could have increased confidence when their fear of approaching clinicians further outweighed confidence in seeking feedback. Secondly, it could also reassure them that approaching clinicians for feedback is expected and acceptable behaviour. Thirdly, it could act as an extrinsic motivator to seek feedback, so they would learn from positive experiences that this is of value and learn how to successfully approach clinicians. However, many senior students felt they were less useful in later years. These students had already developed skills and motivation to seek feedback, so felt a tool to make seeking feedback compulsory was paternalistic and reduced their autonomy. They now sought feedback because they had to, rather than wanted to.

The global assessment statement aided self-regulation by helping students determine if they were performing at the expected standard and identify whether they needed to improve on that task. It also helped to reflect back on previous FPs to see how they had progressed on certain tasks.

For some students, the tool made students more proactive by encouraging them to try a task they would not otherwise have tried. They created new learning opportunities by seeing patients or attempting tasks and seeking supervision to get a FP completed. However, a certain baseline level of proactivity was needed in the first place in order to make use of the FPs as a learning tool.

In contrast, some students' goal orientation changed from learning to performance GO. This change was driven by perceiving the feedback to be summative, the FPs being compulsory and clinicians using them in summative ways. Students now focussed on getting FPs completed rather than enjoying learning and developing competence. They sought feedback on tasks they were already competent

at, because of increased opportunity in performing these tasks and fear of costs of receiving negative feedback. Furthermore, the number of FPs they needed to complete in addition to other paperwork in the module made many feel overwhelmed and stressed.

While some students valued the freedom to decide who, what and when to seek feedback, others wanted less autonomy and more direction to support their learning. They found too much freedom overwhelming and wanted help to identify which tasks were useful. This group of students considered it to be the responsibility of the medical school to dissuade them from performing easy tasks they were already competent at, by giving them a list of tasks to sign-off, rather than considering themselves to be responsible for their own learning.

There was a general culture of clinicians not trusting students to behave professionally. Clinicians did not trust that they would submit FPs with negative feedback and worried they mostly sought positive feedback. Students sensed these feelings of mistrust and the FPs amplified this. They viewed them as "*patronising*" and being checked-up on, which they found upsetting and frustrating. However, it was evident that students did not appreciate how similar the FPs were to the WPBAs they used in postgraduate training, and that these were implemented to encourage trainees to develop and maintain competence, patient safety and public trust. It could be argued that this was our fault, as a medical school, for not clearly emphasising the similarities and rationale for the design and the need to prepare them for using WPBA as a trainee.

Students were more likely to seek feedback if they had developed relationships and felt useful to the clinical team. The FPs did not develop feelings of belonging, but students were more likely to be successful if they were already integrated into the team. If they weren't, the FPs increased hostility and students felt they were irritating clinicians. However, they did encouraged development of relationships with other health professionals such as nurses, and learning opportunities gained through them, which they felt they would not have developed otherwise.

Implementing the FPs enabled some students to overcome barriers to feedback-seeking by helping overcome barriers such as approachability and feeling intimidated by clinicians, empowering them to have the confidence to approach clinicians for feedback. However, in many instances they exposed students to increased costs, such as rejection, refusal, negative responses from clinicians and the need to spend additional time getting them completed. The possibility of receiving negative feedback was associated with cost to self-esteem and worry about potential future repercussions if the FPs were used summatively. If students received useful feedback, the benefits could outweigh these costs. However, in many instances they did not.

The FPs were effective in some cases, for example in cases where students felt they needed confirmation that they were meant to be taught and receive feedback. Students who wished to approach clinicians but lacked confidence to do so, now felt able to, by using the FPs. However, students felt they now had to approach clinicians to complete enough FPs to pass the module. These students perceived the FPs to be less about formative learning and viewed them summatively.

The FPs also worked less well in primary care. In hospital attachments, students were supervised for very short periods of time by different clinicians at different levels of seniority. However, in general practice attachments they were supervised by one or two qualified GPs, who regularly observed them and gave feedback over several weeks. Students already developed a relationship with these clinicians, so likely had developed a sense of trust and belonging. They had fewer barriers to seeking feedback and did not need additional tools to facilitate this. Furthermore, most GPs already had a feedback culture, where students spontaneously received feedback and engaged in a feedback dialogue with a supervisor who got to know them. Many also provided written feedback at the end of attachments. In environments where a feedback culture already existed, students already felt a sense of belonging and received written feedback, the FPs were seen to be additional time-consuming activities with little benefit by students and clinicians. This is likely to be why evaluations were so negative in general practice (section 16.7).

Lörwald (2018) performed a qualitative synthesis on the educational impact on WPBAs and found that it was influenced by the context (such as time to carry out the assessment and usability), learners' and supervisors' knowledge, attitudes and perceptions of the WPBAs, implementation and what the outcome of the assessment was to be (such as being used summatively). I will therefore explore these in the context of my findings.

The FPs did not facilitate feedback-seeking in busy clinical environments where clinicians had less time for teaching, were less interested in teaching or were less available to complete FPs. In fact, the need to complete FPs made students feel uncomfortable about taking up the clinicians' time, made them feel like they were intruding and that asking for more time from them would negatively affect any relationship they had already developed with them. These environments had less feedback culture before implementing the FPs, and the FPs did not improve this. In these circumstances, students received rejection or unhelpful or no feedback. Lörwald *et al* (2019) found WPBAs had little educational impact in organisations where the value of teaching and feedback was felt to be low and the importance of WPBAs was low, resulting in scarce resources and time allocated for teaching, feedback and completing WPBAs. This may have resulted in them being perceived as a tick box exercise (Sabey and Harris, 2011).

Of note, although the evaluation responses from hospital clinicians was positive (section 16.7), we only had a very small number of responses and many responders were engaged with medical education, such as module leads or others who received emails about undergraduate education. Many module leads were aware that students wanted more feedback and they needed to provide this. It is possible that they viewed the FPs as "quick-fix" to this problem, where they could demonstrate they were delivering feedback by quantifying the number of FPs completed, but did not consider the quality of feedback delivered or even if it could be viewed as feedback.

One issue with the FPs was that, while they were intended to be formative, they had a number of summative components. Firstly students had to complete a set number in order to pass the module for them to be an acceptable assessment for module leads. Secondly, some students lacked certainty about what they would be used for and some clinicians and administrators used them summatively. So although we planned to replace the previous summative assessments with a formative tool, this did not work in practice. The lack of useful feedback received contributed to the perception of them being summative. On reflection, it is difficult to consider if having a mandatory number to complete, or a set list of tasks, is the best way of implementing a WPBA tool. On one hand, in medical education we need to ensure the quality of our graduating doctors so we should set guidance on what tasks are essential to be observed and get feedback on in the interests of patient safety. However, with the poor validity and reliability of WPBAs described in many studies (Lörwald *et al*., 2018; Miller and Archer, 2010), one could debate if WPBAs are the best way of ensuring this.

We also hoped that a minimum number would ensure less engaged students, who are likely most in need of observation and feedback, will engage with the minimum number of tasks and receive feedback on these. However, receiving little or no feedback would considerably reduce the educational impact of this. Furthermore, research in postgraduate education describes learners in difficulty selecting tasks which they have performed a number of times before (Mitchell *et al*., 2013). Receiving observation and feedback on tasks they know they can already perform adequately again reduced the educational impact (Lörwald *et al*., 2019).

How students and clinicians used the FPs were also likely to have contributed to their failings. We did not deliver detailed training to students on using the FPs, although they were given written guidance on the back of the FP and on the webpage. Postgraduate trainees who received training on using WPBAs found them more useful than trainees who had not received training (Bindal *et al*., 2011; Weston and Smith, 2014). We also did not provide detailed training to all clinicians using the tool, partly because they replaced previous tools. Although I delivered grand rounds and teaching sessions on medical education days, most likely clinicians who were engaged with medical education would

have attended. Lorwald (2018) found that most studies on WPBAs reported poor knowledge of how to use WPBAs, along with poor attitudes towards them by feedback-givers. Unfortunately, the educational impact of a WPBA tool depends on how well the feedback-giver knows how to use the tool (Jackson and Wall, 2010), their ability to give honest feedback (Weller *et al*., 2009) and how interested they are in training (Bindal *et al*., 2011).

Lefroy (2015) discussed the importance of following up on feedback encounters to allow learners to demonstrate improvement. WPBAs were designed to be used formatively as part of longitudinal supervision, where learners accumulate multiple items of feedback and demonstrate an improvement over time. However, undergraduate attachments tend to be no more than a few weeks each. Such short attachments meant the FPs were used to show snapshots of the learner's performance with little opportunity to show improvement, and even less opportunity to show improvement to the same feedback-giver.

21.4 Did the FPs make feedback more valuable?

Some students and clinicians felt the FPs improved the usefulness of feedback delivered, by reminding clinicians to deliver feedback, helping them structure it and put thought into delivering it. They helped clinicians who lacked confidence with feedback and were anxious about delivering honest, constructive feedback. They also facilitated a verbal dialogue. However, these were clinicians who were already engaged and keen to teach. Clinicians who were less engaged continue to deliver little or no useful feedback and the FP did not improve this.

The value of feedback was reduced by stipulations on who could complete the FPs, with students finding feedback from junior doctors the most valuable but some clinicians only finding the FPs acceptable if students were restricted from seeking feedback from FY doctors.

Students' goal orientation also impacted on their value. Students developed a PGO if they perceived the FPs to be summative, clinicians used them summatively or, for some, by having a compulsory number to complete. As a result, they were less likely to seek feedback for learning and more likely to seek feedback on tasks they were competent at if they perceived increased costs of feedback seeking.

In particular, students found the global assessment statement encouraged them to identify which tasks they were not yet competent at, to focus learning. Students also thought it also helped clinicians give more useful feedback, by prompting them to consider the goal they aimed for, especially for clinicians who taught different years and postgraduate learners.

Many hospital clinicians found the FPs improved their end-of-attachment discussions and formed the basis of a feedback discussion, incorporating the range of opinions from other clinicians into their discussion. However, not all tutors reviewed the FPs, for example if students forgot to bring them. GPs found the FPs less helpful in this respect as they got to know their students during one-to-one sessions and many had a system for colleagues to formally feedback on students' performance directly to them, which was more useful than FPs from colleagues.

Essentially, it wasn't the FPs which altered feedback-seeking behaviour but how they were used and implemented by clinicians and students. They could promote feedback seeking and enable valuable feedback discussions, but if clinicians did not have the skills to or were unable to deliver useful feedback, or used them summatively, this made the FPs be of far less value and the costs of seeking feedback outweighed the benefits. This highlighted the importance of needing targeted training at the same time as rolling out an intervention if the intervention is to be effective.

Towards the middle of the full roll-out cycle, it became clear that the FPs were being perceived increasingly negatively by students, despite being positively received in the pre-pilot and pilot cycles, indicating that a full roll-out of an innovation may have the opposite impact to a pilot. More involvement of students and clinicians teaching on the ground, as well as better communication, may have helped.

21.5 How the FPs could have been improved

As described above, the FP did not encourage feedback-seeking in a number of contexts. Where there was less of a feedback culture, implementing the FPs did not improve this but instead made attachments more stressful for students.

A number of improvements could be suggested if they were to be implemented again:

1. Increasing staff receptivity
- Staff training on using the FPs: as discussed above, feedback-givers who understand how to use WPBAs are more likely to use them with more educational impact
- Staff training on delivering feedback and recognising feedback-seeking: students often described receiving little or no useful feedback.

2. Better staff engagement
   Although we delivered training sessions at grand rounds and medical education days, clinicians who were less engaged with education were less likely to attend. Developing a culture of understanding the importance of teaching students and delivering feedback may have improved this, along with the possibility of including evidence of attendance in

appraisals. Furthermore, clinicians who were busy with clinical commitments, including junior doctors, and therefore unable to attend teaching sessions would also have missed these sessions. More sessions with online recording may have increased uptake of these sessions. However, ultimately not all clinicians would be interested in teaching or engage with training sessions on improving feedback. While it is easy for people interested in medical education to expect all clinicians to be involved in teaching, in reality if they deliver poor teaching and do not view it as a priority for them, it might be better for them to be less involved. Some students suggested having an allocated clinician to approach for when they needed FPs completed. In practice, having a group of engaged clinicians who were agreeable to this might have been useful, potentially reducing students' concerns about rejection and receiving unhelpful feedback.

3. Removing restrictions on feedback givers
Students found feedback from junior doctors more useful than consultants. They perceived them to be more credible at certain tasks and, from a pragmatic perspective, were more available to observe tasks and seek feedback from. They also found them more approachable. Clinicians also described lack of availability and being too busy. Allowing students more freedom to seek feedback from available clinicians may have encouraged use of the FPs to seek feedback

4. More student choice
Students described needing to stay on the wards, despite not being involved in ward activities, hoping that they would get the opportunity to perform tasks they needed to get signed off. While students found a list of tasks useful, having a larger selection of tasks deemed to be important for that attachment from which they could select some or all, may have been more helpful and allowed some autonomy.

5. Better student and staff communication
There remained uncertainty about the purpose of the FPs and whether they would be used summatively. Better clarification to students and staff on the purpose of the FPs could have helped. Furthermore, on reflection, using them for discussion at exam board meetings to discuss underperforming student's exacerbated students' concerns and in hindsight this was an unhelpful decision.

6. FP design

Students found the design useful, including the structure with space for feedback on how to improve and what they performed well, and the global assessment statement.

7. Quality assurance

   Better auditing of comments on the FPs with feedback to clinicians if they had delivered unhelpful feedback may have helped. However, this may also have discouraged clinicians with less interest in teaching from having more involvement in teaching if this feedback was delivered in an unhelpful way, or delivered to their supervising clinicians.

21.6 Concept map summarising how a formative WPBA tool may promote feedback seeking

Figure 33 illustrates how a workplace based assessment tool can promote feedback-seeking. Fear and cost of seeking feedback were inhibitors of feedback seeking. Decreasing some of the factors that caused fear, such as rejection, feeling unwelcomed by clinicians and receiving negative feedback in an unhelpful way, could be helped through staff training on delivering feedback, recognising feedback seeking attempts and promoting staff engagement with education. Increasing staff receptivity and engagement could also improve confidence, which could overcome fear. Previous successful attempts at seeking feedback using the FPs could also improve confidence.

Students weighed the benefits and costs of seeking feedback. They were more likely to use the FPs to seek feedback if the benefits outweighed the costs. Potential costs included feeling unwelcomed by clinicians for taking up time and ruining their relationships with clinicians, receiving no feedback or unhelpful feedback. These could potentially be reduced through better staff receptivity, allowing students more choice on who they seek feedback from and on what and not imposing restrictions of feedback-givers and tasks. Lack of certainty about the impact of FPs and lack of student and staff training on how to use the FPs could be improved by better staff and student training, especially as they replaced a previous summative model of WPBA which was intended to be used differently. Better communication on how and why the FPs were implemented, their formative use and examples of how they could be used in the clinical environment could also help. Students worried that the FPs were used summatively and as described earlier, there were summative elements in their implementation. They therefore worried about the cost of receiving negative feedback on the FPs. A truly formative tool could reduce this cost. Students needed to complete a certain number of FPs to pass a module. While this made them less formative, so some students viewed them as a necessity rather than a

useful learning experience, others found this increased their confidence to seek feedback because if they experienced annoyance from clinicians, they could shift this annoyance to the medical school without ruining their relationship with the clinician. More rigorous quality assurance to review the feedback comments, identify which departments found it difficult to deliver useful feedback and target resources into delivering more staff training could potentially have also improved the useful feedback and hence the benefits of using the FPs. The FPs were implemented in a way to make them acceptable to staff. Despite this, many clinicians still did not complete them adequately, with little or no helpful feedback on many of the FPs. In hindsight a more student-centred approach on how the FPs could be implemented would have improved their success as, ultimately, they were intended for students' learning, not to benefit clinicians.

Figure 31 Concept map summarising how a formative WPBA tool may promote feedback-seeking
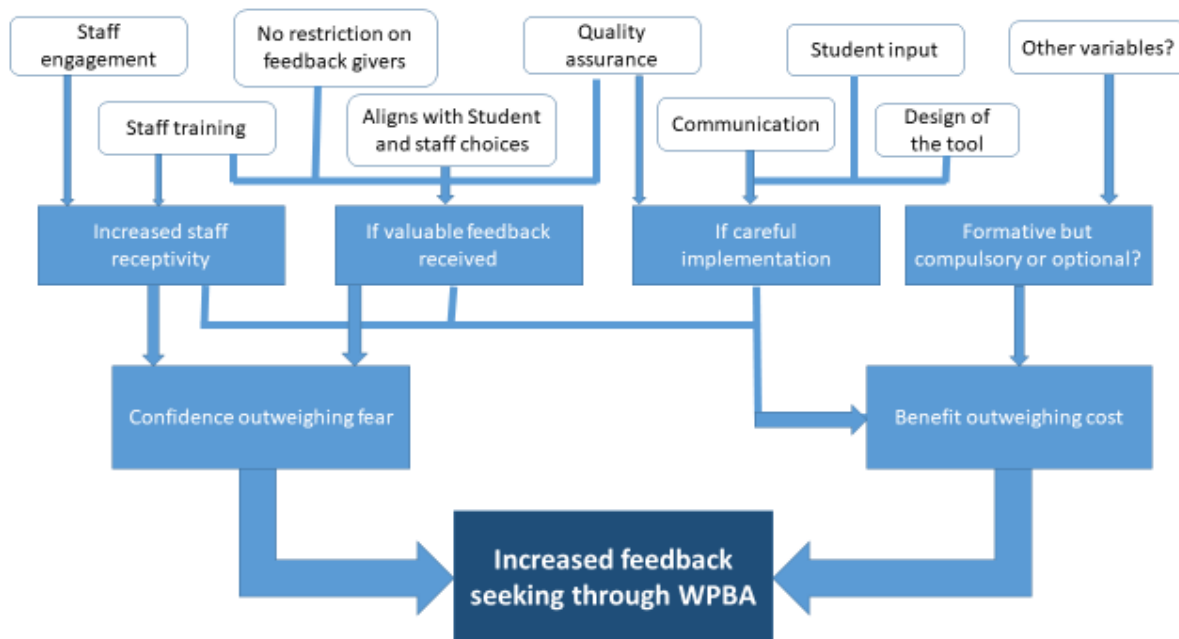
21.7 Addressing Aim 2 of my research question

Aim 2: To explore if a formative WPBA tool can help learners overcome the barriers to feedback-seeking described in the first aim

I have answered this aim in the findings and will now discuss them.

I have aimed to answer this to the best of my ability. However, while I intended to implement a formative tool, in reality there were summative elements to how it was implemented and/or used.

For example, students needed to complete a certain number to pass the module and some clinicians and administrators used the FPs as a way to assess engagement, deliver end-of-module grades and discuss the student at exam board meetings if they performed poorly on summative examinations. Section 20.2 describes students' concerns about the feedback on the FPs being used summatively and that they would therefore be penalised in some way for receiving negative feedback. Other studies have also found that learners can be uncertain about how WPBA tools are used (Crossley and Jolly, 2012; Gaunt *et al.*, 2017b). Uncertainty about the intent of WPBA tools can lead to tensions in seeking feedback using the tool. When learners perceive the tools are being used summatively, they are more likely to seek feedback on tasks they have performed well or during other situations when they are more likely to receive positive feedback, rather than as "assessment for learning". This has been described in postgraduate training where trainees in difficulty are more likely to request WPBAs on less difficulty tasks or tasks they had performed successfully before (Mitchell *et al.*, 2013).

As described in section 19.5.2, many clinicians gave unhelpful or even no feedback despite using the FPs and students described clinicians having "no interest" or not caring about feedback. I confirmed this with my review of feedback comments on the FPs (section 5) which were sparse, generic or no comments were given. Overcoming barriers such as fear of approaching clinicians and risking making themselves vulnerable by asking for feedback, only to receive no or unhelpful feedback, would likely have made students feel they had made an effort to get very little in return and therefore using the FPs were unhelpful to their learning. Receiving very little written feedback could also have contributed to them viewing the FPs as summative (Ali *et al.*, 2012; Vivekananda-Schmidt *et al.*, 2013).

The combination of unhelpful or no feedback, needing to complete a certain number of FPs per module and lack of clarity and consistency about how the FPs were being used was likely why students viewed the FPs as a "*tick box*", "*bureaucratic*" exercise that they were "*forced*" to do. These views have also been expressed in other studies of learners using WPBAs (Barrett *et al.*, 2017; Bindal *et al.*, 2011; Talbot, 2004) and unfortunately I have been unable to overcome the factors that contributed to this. The comments from students expressing feelings of being a "nuisance" when asking for feedback, feeling clinicians are too busy and feeling clinicians are disinterested in giving feedback, along with comments from clinicians (section 19.5.3.2, evaluation data section 16.7) about feeling the FPs were a nuisance, not having time to give feedback and having to persuade their colleagues to potentially indicate the reasons for this- that there was less of a feedback culture. Implementing the FPs did not solve this but in fact highlighted the issue further.

When selecting who to ask to complete a FP, students preferred clinicians who were more approachable and less fearful of, such as junior doctors. They also preferred to approach clinicians

they perceived to be more credible (sections 19.3, 19.4). The impact of relationship between the feedback giver and feedback seeker on use of WPBAs has been well described, with undergraduate and postgraduate learners being more likely to approach a feedback-giver they found supportive and had a positive relationship with (Bok *et al*., 2013a; Eva *et al*., 2012; Gaunt *et al*., 2017a; Teunissen *et al*., 2009) and found credible (Eva *et al*., 2012; Watling *et al*., 2013b). As described in sections 9 and 10, when considering whether to seek feedback, learners weighed the costs, which included the costs of receiving negative feedback to their self-esteem, image and feelings of self-worth (Anseel *et al*., 2015; Bok *et al*., 2013; Crommelinck and Anseel, 2013; Fu *et al*., 2019). They make themselves vulnerable in front of someone with more power, displaying their potential weaknesses and failings for critique (Dannefer, 2013; Watling and Ginsburg, 2019). It is not unreasonable for them to need to feel psychologically safe and get to know someone before exposing their vulnerabilities to them and develop the trust needed to enable learners to use feedback for learning (Carless, 2012; Telio *et al*., 2015; van de Ridder *et al*., 2015). This is unfortunately harder with the short attachments typical in undergraduate education, so students experience tensions between gaining opportunities to learn from a WPBA and risk making themselves vulnerable. This could also explain why some found using the WPBAs so stressful, as described in my findings in section 18.9 and in postgraduate training (Malhotra *et al*., 2008). Castanelli (2021) explored the role of trust in the supervisor-trainee relationship in postgraduate training and described trainees being more likely to seek WPBAs when supervisors encouraged learning encounters, which made them feel comfortable as they felt their supervisor was committed to them and their learning and was delivering feedback for their benefit. These findings support my findings in section 18.8, where students were more likely to successfully seek feedback using a FP if they already had developed a relationship with the clinician. They were also more likely to be asked to perform tasks by clinicians they had developed a relationship with, potentially because the clinician had developed some trust in them (Castanelli *et al*., 2021), leading to more opportunities to seek feedback.

21.8 Contribution to current knowledge

This thesis has explored:

- what motivates learners to seek feedback in the clinical environment and the barriers that inhibit feedback-seeking
- the impact of a formative WPBA tool on feedback-seeking behaviour

I will now discuss how this supports or contributes to current knowledge on feedback seeking in medical education.

21.8.1 Relationship between self-determination and feedback-seeking

In his theoretical paper, ten Cate (ten Cate, 2013) argues that giving feedback reduces a learner's self-determination because feedback aims to identify and correct deficiencies, so reducing feelings of competence without improving feelings of autonomy. The social interaction and emotions associated with receiving feedback and how the feedback-giver delivers the feedback may reduce feelings of belonging if the feedback is negative. However, the effect of feedback seeking behaviour on self-determination has been insufficiently explored in medical education. My findings indicate a bidirectional relationship between seeking feedback and self-determination. That is, more self-determined learners are more likely to seek feedback and feedback-seeking can increase self-determination. I will discuss this further by considering the individual components of the SDT, autonomy, competence and belonging.

Autonomy

Ten Cate argues that feedback seeking develops autonomy because they choose who, when and where they seek feedback from. Chapter 9 describes more autonomous learners being more likely to perform tasks and so have more opportunity to seek feedback. Furthermore, when a learner sought feedback and demonstrated they could perform the task and have an awareness of their limitations, they were more likely to be trusted and so given more autonomy with similar tasks.

Competence

The SDT states that increased competence increases motivation. In my findings, many students who already felt competent sought feedback if it was perceived as summative, or if the task was so valuable to being a junior doctor that they wished to improve confidence and desired reassurance.

However, in conflict with the SDT, students who felt they lacked competence at tasks were also motivated to seek feedback to develop competence, especially if the task was relevant to being a safe and competent junior doctor or they had a LGO. So high and low competence drives feedback seeking.

Belonging

My findings highlight the importance of developing relationships to promote feedback seeking, which increased confidence to seek feedback and increased the value of feedback sought. This supports previous findings in the literature. A trusting relationship with the feedback-giver creates a psychologically safe environment to help learners engage with feedback (Bates *et al*., 2013; Watling *et al*., 2013b) and a positive relationship between the learner and feedback-giver promotes feedback seeking (Bok *et al*., 2013; Bowen *et al*., 2017b; Gratrix and Barrett, 2017; Pelgrim *et al*., 2014). My findings also suggest how students feel their sense of belonging can be developed; through having a role in the clinical team, more exposure to the clinical environment, clinicians initiating a positive

relationship and longer placements However, there was no evidence in my findings to suggest seeking feedback increased belonging.

In summary, more self-determined learners seek feedback through feeling increased autonomy (and therefore opportunity), greater sense of belonging and sometimes a greater sense of competence, while feedback-seeking increases self-determination through increasing autonomy of the learner and their desire to increase competence.

Figure 32 Concept map showing the bi-directional relationship between feedback-seeking and self-determination
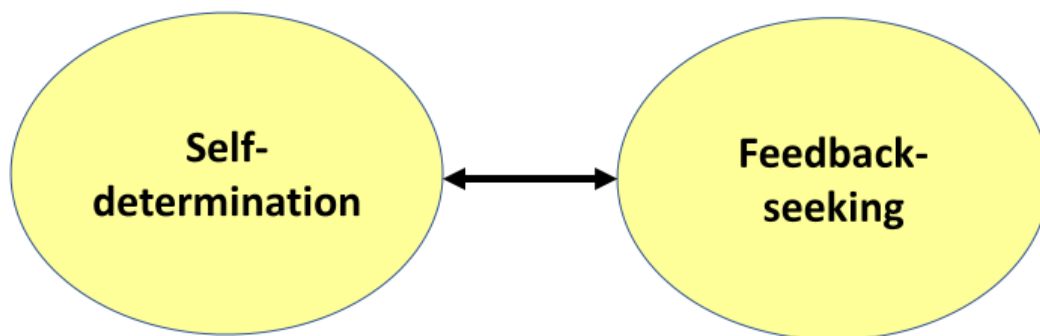
21.8.2 Goal Orientation

The small number of medical education studies suggest that learners with PGO are motivated to seek feedback due to fear of failing, appearing incompetent and performing worse than others (Janssen and Prins, 2007b). While they describe PGO increasing perceived costs of seeking feedback (Teunissen *et al*., 2009c) (Gaunt *et al*., 2017a), some found that LGO increased perceived benefits and reduced cost (Teunissen *et al*., 2009c) while others did not (Gaunt *et al*., 2017a). My findings support previous studies suggesting that goal orientation influences feedback seeking, which has not been explored in undergraduate medical students and there are few qualitative studies exploring this. In my study, students demonstrated LGO by seeking feedback to learn how to improve performance, check they were on the right track or for reassurance if the tasks related to their desire to be a safe, competent junior doctor. Others demonstrated a PGO, seeking feedback if they worried about failing exams similar to findings from other research (Janssen and Prins, 2007b).

While PGO is generally viewed negatively by educationalists and we all strive to have students with LGO, much of the literature considers GO as related to learners' intrinsic factors. However, interestingly, my research suggested that external influences, such as how the FPs were implemented, drove PGO. As educationalists, we must appreciate that GO doesn't just depend on learners, we may inadvertently cultivate it through interventions we implement and the culture we build. For example, students wanted good exam results and this drove feedback seeking in the clinical environment in many. However, their rankings affected their choice of their future job and location. While some may have just wanted good grades, others may have wanted to relocate near family or develop an interest in a particular specialty, so the job allocation system can drive performance GO.

21.8.3 Balance of confidence and fear

My findings illustrate the significance of the balance between fear, which inhibited feedback seeking, and confidence, which overcame fear and enabled feedback seeking. Students described fear of clinicians, negative feedback and the clinical environment. This supports other researchers' findings which found fear of negative feedback discouraged feedback seeking (Delva *et al*., 2013; Ramani *et al*., 2018b). My research explored this in more detail and I have described that this was due to the fear of negative feedback impacting on confidence, self-esteem and professional identity. Students were particularly anxious about receiving feedback that would indicate they were not going to be a competent, safe doctor. To my knowledge, no studies have explored how fear of the clinical environment discourages seeking feedback, which my findings suggest relate to fear of the unpredictability of the clinical environment and feeling awkward seeking feedback in front of patients. This is a significant but difficult barrier to overcome, as hospitals, by their nature, contain sick patients who are likely to unpredictably become unwell and these barriers are not going to change.

Students' fear of clinicians was also a prominent theme, due to previous negative interactions or fearing senior clinicians. This supports findings from Gratrix (2017), who described this in nursing students.

My findings also illustrate the importance of confidence to overcome fear. Confidence has been referred to in some studies (Eva *et al*., 2012a), but has been poorly defined in medical education (Roland *et al*., 2015), which makes these studies difficult to interpret. In my findings, this confidence developed through increased integration, previous positive experiences and being older and more experienced. Increased belonging enabled students to feel more comfortable seeking feedback.

21.9.1 Value of feedback

To my knowledge, there has been little exploration of the value of feedback sought in a medical education context. Previous studies (Bates *et al*., 2013; Lefroy *et al*., 2017) suggest that learners find

verbal feedback more useful than written feedback. My findings support these studies but for feedback sought.

In section 1, I described the challenges with feedback, such as learners feeling it is of insufficient quality and clinicians struggling with giving negative feedback due to fear of upsetting students. However, feedback-seeking can overcome lack of clinicians' confidence in delivering negative feedback, by giving "*permission*" to offer it, so clinicians worried less about upsetting students.

Students also valued seeking feedback which was important to their professional identity, to help them to become a safe, competent junior doctor. This supports findings from Ravik (2017), describing nursing students being more likely to seek feedback if it improved patient safety, although this study's findings only related to one task.

21.8.5 Why feedback seeking behaviour develops as students mature
Previous studies have described the development of feedback seeking behaviour in students as they mature (Murdoch-Eaton and Sargeant, 2012; Ramani *et al*., 2018). My findings add to this knowledge, exploring why and how they develop feedback seeking behaviour and overcome barriers as they get older, which is useful for a medical school as we can consider how we can promote students to overcome barriers earlier (chapter 13).

21.8.6 Culture
Few studies have explored the impact of culture on feedback seeking. Ramani (2018) found a culture of "*politeness*" reduced the value of feedback sought, because learners felt feedback-givers were reluctant to give honest feedback. My research supports the findings of culture influencing feedback seeking and learners wanting honest feedback. Students perceived that hospitals were clinicians' territory, the culture of perceiving teaching was not part of clinicians' roles and the perception that it was "*traditional*" to be intimidating, all inhibited feedback seeking by increasing fear of clinicians. Of course, the culture of medicine in an old medical school in the UK will be different to America.

Furthermore, unlike Ramani's study, I found that lack of honest feedback was related to clinicians' lack of confidence, anxiety about upsetting their student and reducing their motivation, and concerns that giving honest negative feedback would be more time-consuming if the student confronted them about it.

21.8.7 How a WPBA tool impacts on feedback-seeking
The impact of a WPBA tool on feedback seeking has been described earlier in this chapter. To my knowledge, there are no studies exploring this. Several studies exploring feedback seeking make the assumption that feedback seeking or motivation can be measured through the number of WPBAs completed (de Jong *et al*., 2017; Gaunt *et al*., 2017a). In reality, however, WPBAs may be initiated by

feedback-givers as well as learners (Barrett *et al*., 2017). Furthermore, multiple studies refer to learners using WPBAs as a "*tick box*" exercise (Barrett *et al*., 2017; Bindal *et al*., 2011; Talbot, 2004), so while they may be related to motivation, they can be the result of performance GO rather than learning GO.

My findings support other researchers' findings suggesting some learners use them as a "*tick box*" exercise, and the WPBAs can drive a performance GO. Other researchers have also found that learners can perceive formative feedback to actually be summative (Bok *et al*., 2013a; Harrison and Wass, 2016; Harrison *et al*., 2017), which interferes with the intended educational effect (Driessen *et al*., 2011).

21.9 How educational organisations can encourage feedback-seeking

Section 4 explored the barriers and enablers to feedback seeking and how students develop the ability to overcome these barriers, so are more likely to seek feedback as they progress. However, allowing students to intrinsically develop the ability to overcome these barriers described in previous chapters takes time. Some barriers are static and cannot be overcome, such as barriers relating to staff shortages or the nature of the clinical environment. Students also learn these skills at different rates, so some are more likely to seek feedback to varying degrees and some are still not able to by the end of the course (section 4). Students themselves acknowledged the need to develop skills to seek feedback and overcome barriers earlier.

As an educational organisation, we therefore must consider how we can encourage students to overcome these barriers earlier, to maximise their learning in the workplace and take advantage of all learning opportunities available to them.

I have explored the impact of a formative WPBA tool on these barriers in section 6. There are other ways we can help them overcome these barriers earlier, as well as breaking them down ourselves.

I will now discuss these.

21.9.1 Producing guidance for students on how to approach and interact with clinicians

Students discussed a number of strategies that they felt, in retrospect, could have helped them to develop the skills to seek feedback earlier on in the course. I have developed the following guidance from the data.

1. *Knowing you are supposed to be present*

Firstly, students wanted reassurance that they also had a right to be present in the workplace, and in fact needed to be there to become a good doctor. Reassurance could help overcome the feeling that they did not belong and were in the way.

2. Keep trying to approach clinicians, even after you get rejected

Students developed successful ways of approaching clinicians, based on past experiences, such as being more assertive. They found it harder to return if they were sent away from a ward when rejected, and would not always return because it took additional "*courage*".

3. Suggest useful tasks you could do

If initial attempts at approaching clinicians were unsuccessful, students suggested helping with tasks, demonstrating enthusiasm to learn, for example helping junior doctors with jobs or looking through notes. Some tasks benefited their learning, but they also ensured they stayed within the vicinity of the clinician so they would not be forgotten.

4. Ask questions

Asking questions helped initiate conversation with clinicians, demonstrating enthusiasm to learn and encouraged clinicians to engage with them and not ignore them. Some planned questions to ask before the ward round and proactively looked at patient notes as preparation.

5. Approach clinicians early on

Students found they were more successful if they approached clinicians early on, such as the start of the teaching session, to ask for feedback. Clinicians found multiple feedback seeking attempts at once overwhelming and they did not have time to give sufficient attention to everyone. Spreading V attempts throughout the attachment also proved to be more successful than asking at the end, so clinicians were more receptive and students could utilise the feedback to demonstrate improvement during the attachment.

6. Choose carefully when to approach a feedback giver

Students developed a sense of when clinicians would be more receptive for the best chances of success. They interpreted clinicians' behaviour to gauge their approachability, by observing verbal and non-verbal cues. They also considered clinicians' workload, approaching clinicians who appeared less busy and so more receptive.

7. Appreciate clinicians can become abrupt because they are stressed- don't take this personally

Students were put off by previous abrupt and abrasive responses, which they found challenging and viewed it as rejection, especially younger students who found it difficult to interpret what was going on in the clinical environment. However, clinicians described responding in this way when overwhelmed and stressed due to other pressures, not the student. Explaining that clinicians could be abrasive when stressed because of other commitments, not the student, could help overcome rejection and encourage them to seek alternative learning opportunities.

In addition to producing guidance for students, this study also identified areas for further staff training.

21.9.2 Areas identified for staff training

How to deliver effective feedback

Students described past experiences of receiving unhelpful, vague, non-specific feedback which decreased its perceived value, reducing further feedback seeking. Negatively phrased feedback made the experience of receiving feedback traumatic for many students and reduced confidence. However, useful past experiences of feedback-seeking encouraged them to overcome barriers because the benefits outweighed the costs. Clinicians found it challenging and lacked confidence with delivering honest feedback, often opting to give positive feedback instead. Some clinicians felt they had been trained to be doctors, not educators, so training would be helpful.

As the medical school already had training sessions on delivering effective feedback, why clinicians did not access these sessions is an area for further work.

Increasing receptiveness to feedback-seeking

While many students appreciated the importance of proactivity to seek feedback and create learning opportunities, they also felt clinicians needed to be more receptive to feedback seeking. They felt that if clinicians had agreed to take on teaching responsibilities, this was part of their role, so should be more willing to provide feedback and teach. Raising awareness of feedback seeking, how to recognise it and how to respond positively and welcome feedback seeking attempts would increase clinician receptivity.

A go-to clinician

Constantly changing clinicians and moving around rotations meant students didn't always get to know clinicians well enough to judge how open they would be to feedback seeking attempts. Identifying key people to seek feedback from who expected to be approached would increase chances of successfully seeking feedback and reducing students' fear or hostile reactions of being an annoyance to clinicians.

21.9.3 Guidance for medical schools and educational organisations
Consider having one key person supervise the student throughout their time at medical school

In hospital attachments, teaching fits in with rotas and delivery of patient care so students may have different people teaching them every day during their attachment. This makes it difficult to gain oversight of their progress. WPBAs work best when they can be used to accumulate multiple pieces of feedback over time. Module leads were only able to review the FPs collected during the several weeks of their module, which only provided brief snapshots. Collecting feedback over several months as part of a portfolio and having one clinician reviewing this, facilitating reflections on how to improve could show how the student is progressing and increase the educational impact of WPBAs. The

student's Director of Studies is ideally placed to do this. Directors of Studies in EMS have varying levels of contact with their students, but in other medical schools they are expected to meet with individual students at least 2-3 times per year. In postgraduate training, this is the role of the trainee's educational supervisor and is something I, from personal experience, have found useful.

Clear communication when implementing change

When the FPs were first implemented, students described clinicians not knowing about them and it took a while to raise awareness of these. While module leads had disseminated information about them to consultants teaching in their module, this had not always reached junior doctors and nurses teaching on the ground.

When they were used, they were often not used as intended. For example, while they were intended to capture written feedback, many were returned with little or no feedback. Clinicians also commented how useful they were for assessing attendance and engagement during placements, which again was not their intended purpose.

Clearer and more frequent communication with module leads and clinicians teaching undergraduate students could have realigned their expectations of the FPs and corrected any misinterpretations of their use. Unfortunately I had insufficient time to do as I returned to training.

Feedback for feedback-givers

Giving clinicians feedback on the usefulness of the feedback on their FPs could draw attention to the importance of feedback in teaching, how important the medical schools perceives it to be and hopefully help clinicians identify areas for their own improvement. Furthermore, clinicians could use this as evidence of teaching involvement for their appraisals.

More student-centred implementation

Earlier involvement of students when implementing any change could have made the FPs more student-centred. Students could also have been allowed more choice on who to seek feedback from, so they could target clinicians who were more available or more interested in teaching (and hence more likely to be successful seeking useful feedback). They described feedback from junior doctors as more useful and more credible but, due to implementation, they still had to seek feedback from senior clinicians.

Reducing summative cost

Despite the original intention of a formative WPBA, there was considerable summative cost associated with them. Firstly, students needed to complete a set number to pass the module. However, not having a stipulated number may not be acceptable in medicine, when the quality of graduating doctors

can impact on patient safety (Castanelli *et al*., 2021). I was certainly unable to implement the tool without this stipulation in EMS.

However, students worried about what the FPs would be used for and what the cost was of receiving negative written feedback on a FP. The FPs were used to assess attendance, engagement and for discussion in exam boards if students performed poorly in exams. These uses increased the summative cost of the FPs and confirmed students' concerns. Tighter control on how the FPs were used and when could improve this, followed by clearer and ongoing communication with students to reassure them.

21.9.4 Restructuring the teaching environment

Students experienced resistance from clinicians who felt teaching was not their role and they were not paid to teach. Clinicians also noted that not everyone delivered teaching, as some prioritised other non-clinical commitments such as management. Conversely, students, especially overseas students, felt they paid for teaching but did not receive what they paid for.

In Edinburgh, the NHS receives a set amount of funding per student per year. Consultants receive time for professional activities, but this includes their own development, management and other non-clinical activities including teaching. Junior doctors and nurses do not receive allocated teaching time. Clinicians therefore do not directly receive funding for teaching and do not see it directly benefiting their department.

Greater transparency of funding allocation, with job plans including teaching activities, would create a culture of viewing teaching as part of their role and improve engagement.

Other suggestions include smaller group teaching sessions and building in time for teaching. This worked extremely well in GP, where they timetabled supervision into their surgeries.

21.10 Quality in qualitative research

Lincoln and Guba (1985) have described four criteria for assessing quality when evaluating grounded theory studies; credibility, transferability, dependability and confirmability. I will discuss the application of these criteria to my research as follows.

Credibility is one of the quality indicators described by Charmaz and refers to how well my data reflects multiple realities, how confident a reader can be about the truth of my findings, whether my findings are plausible from my data and whether my interpretations of my data is correct (Charmaz, 2006). It depends on the range, number and depth of my observations. For example, prolonged engagement with research participants improves credibility, which I strived to do as much as is possible, through interviews lasting an hour or more. I also maintained contact with my research

population through questionnaires and interacting on their online discussion board over the two year period of my fellowship. In terms of engagement with staff, in addition to interviews I maintained communication with module leads for the extent of my out-of-programme fellowship until I returned to training. I recruited a number of students and staff to participate in my study and generated rich data from interviews with them. Furthermore, my student questionnaires generated a significant number of responses although my staff questionnaires did not. I have also made systematic comparisons of observations and categories when analysing my data.

I tried to maintain strong reflexivity to analyse any taken for granted assumptions and avoid any of my hidden beliefs from entering the research process (Charmaz, 2014; Charmaz and Thornberg, 2020). For example, during data collection I heard a number of alarming experiences from students, such as Steve describing another student being called a bimbo (section 8.5.4). Understandably, as a female myself, I was horrified at what I felt to be misogynistic behaviour from my colleagues. I had no doubt that these experiences were very real for these students and was upset that my peers could have behaved in this way. However, I also had a good working relationship with a number of clinicians. I had to be careful to not let these views contaminate my interpretation and analysis

I have described triangulation of my data and persistent interaction with my data in my methodology. Triangulating investigator coding would have been ideal but I was limited by resources as I was the only investigator. I mitigated this by discussing my codes and emerging theory with my supervisors. Unfortunately I was unable to member check my interpretation of my data with participants as they did not respond when I attempted to contact them. This meant I could not ask them to correct any misinterpretations I had. (Brown 2002, Carcary 2009)

Transferability refers to the applicability of my findings to another setting and is improved with clear, detailed and transparent descriptions of my research, including participants and the setting of the research, information about me as an instrument in the process and how I reflect on my role in this (Morrow, 2005). I have written detailed descriptions of the context of my research, including the setting (section 1) and the participants (appendix). I have also written detailed descriptions of my research processes, my methodology and my emerging theory to allow other researchers to complete same research in a similar setting (Cooney 2010). These were also discussed in my end of year reports with my internal reviewer (VM). I have described my own role in the development of my theory, acknowledging the impact of my position as a trainee and how students may have viewed me as a member of the teaching faculty. During supervision meetings, I debriefed after each data collection

step with my research supervisors to consider how their interpretation of the data differed from my own and reflect on this.

However, I would like to note that I only had small numbers in individual groups. For example as I only had two postgraduate students participating in my interviews I would advise caution when considering the implications of my findings on a postgraduate medicine course. Similarly, I only had one year 3 student and two nurses participating.

Dependability refers to confirming that my findings are consistent over time (Brown 2002). My methodology, methods and analysis were reviewed by my supervisors and my internal reviewer (VM) during the process and I have included a detailed description and a timeline of my activities with this thesis (Morrow 2005). My appendix also includes the questions asked in my surveys and the initial semi-structured interview questions, a timeline of my data collection and why I collected data to explore emerging patterns of concepts as I went along. I also maintained a codebook during the research process, which was reviewed by my supervisors. In response to an earlier correction I have also now included an example of my coding as requested.

Confirmability refers to what extent my findings can be confirmed by other researchers and are clearly derived from the data (Brown 2002). As described above, I kept an audit trail to show the chronology of my research processes, which were reviewed by my supervisors and an internal reviewer (VM). I also kept a reflexive journal during the process and have reflected on a number of issues may have impacted on analysis of my data in chapter 21. In my discussion I describe how my findings fit with what we already know about this area and the findings from other researchers

21.11 Assumptions made when conducting this research

I considered age and maturity to be important but with my small data set I was unable to reach data saturation for this part of my theory. I have therefore drawn on findings from other research studies such as Murdoch-Eaton (2012) and Bowen (2017). These medical education papers describe students transitioning from passively expecting to receive feedback to actively seeking feedback as they became more senior. During my literature review, I critiqued these papers and felt they were high quality. I therefore hoped to add to this knowledge and explore how it became important. No previous studies have described the difference in feedback-seeking behaviour in students studying medicine as a postgraduate degree compared to studying as an undergraduate degree, and if feedback-seeking

increases with age or with more time spent in the clinical environment as a student. I therefore was unable to assume that the two postgraduate students in my study had more developed feedback-seeking behaviour than the undergraduate students in the same year. As I was unable to recruit more than one student from year 3, I used reflections from senior students to contribute to my theory. This assumed that retrospective memories of feedback-seeking in earlier years are as real as descriptions from students who are currently in earlier years.

Another assumption I made is assuming when students talk about their ability to seek feedback this is the reality. I used self-reported descriptions of feedback seeking rather than observing these events for myself. However, we know health professionals are poor at self-assessing (Eva and Regehr, 2008, 2005; Sargeant *et al*., 2008) and that those who rate themselves as proficient at a task may be less proficient than their colleagues (Robbins *et al*., 1994). I have not applied this literature to students' self-reported descriptions of feedback-seeking and extrapolated it to how well they perceive they seek feedback. This is the nature of grounded theory research, where the researcher assumes that multiple realities exist the reality is known through the mind of people experiencing it (Guba, 1990, Bogdan and Biklen, 1998, Watling and Lingard, 2012). If I had used different methodology and methods where I observed episodes of feedback-seeking, I may still have developed an inaccurate view as, like clinicians described themselves, I may not have recognised feedback-seeking attempts myself. Furthermore, this would not have answered my research question (as discussed in section 3).

Another assumption I made when discussing competence as a promoter of feedback-seeking (section 9) is that I assume self-reported competence is an indicator actual competence. However, as discussed above, research in self-assessment has indicated this is not always an accurate reflection or actual competence.

21.12 Strengths and Limitations

It must be noted that this was a single-centre study, so transferability of findings to another school or postgraduate education should be done with caution.

The same facilitator led all interviews. My own influence on the data collection and analysis should not be under-estimated. I was influenced by my own experiences as a trainee who had sought and received feedback, as well as someone who had given feedback and who trained at this medical school. It is likely that a different facilitator from a different background may have facilitated the interviews and analysed data differently. My supervisors read a selection of my transcripts, listened

to some audio-recordings and discussed my coding during meetings, to ensure I could justify my interpretations.

All interview participants were volunteers, and so would have represented the views of those extroverted enough to volunteer for this type of study, or who felt passionately about the subject. I therefore used questionnaires in addition, to capture the full richness of views of students in years 3, 4 and 5 to triangulate my data.

As discussed at the start, I explored both thesis aims together, while co-developing the WPBA tool. While this was pragmatic, given I only had two years to complete this research and needed to implement a tool that could address the School's poor feedback ratings in the NSS, my implementation of the FPs would have been different had I fully explored the problem (aim 1), before considering a solution (aim 2). Many barriers to completing the FPs were created through implementation, such as restrictions on feedback-givers. With hindsight, addressing each aim consecutively is something I would have liked to do, if I had more time.

I remained reflexive throughout the research process. For example, I found myself unexpectedly bonding with most of my interview participants. I became extremely upset when they described experiences they found traumatic, enjoyed hearing about funny anecdotes or was fascinated by interesting cases they discussed. I found myself being influenced by their opinions. I wanted this project to give a balanced view, taking into account all participants, and not to be too students or clinician centred, so I listened to my audio-recordings afterwards and wrote reflective notes to try and rebalance my views. This also helped highlight areas to explore in further interviews.

Limitations of my data set

My study recruited 13 students and 11 staff. This was only a small number out of a possible 750-800 students and over 1000 staff. With such a small data set, my data can never be truly fully saturated. Furthermore, out of these participants I only recruited one year 3 student and 2 year 4 students. So few participant in younger years made it difficult to explore how younger students seek feedback, which is why I used retrospective reflections from final year students. Ideally I would have liked to include more junior students to test my emerging theories against data from them.

One of my findings discussed how feedback seeking developed as students matured. However, I only recruited 2 postgraduate students and these were both in final year. This means I am unable to draw conclusions about whether the development of feedback seeking is related to being older, being in the clinical environment for longer or being in higher education for longer. More postgraduate students in earlier years would have been useful to explore these findings further.

I recruited a number of international students. Annabel and Sue were from Asia, Darcy and Linda were from Western Europe and Sandra was from Eastern Europe. Given the different cultures they came from, and the cultural influences on feedback seeking, having such a large proportion of international students might have impacted on the development of my theory.

Majority of students preferred to seek feedback from foundation doctors in their first two years of training. However, I did not include any foundation doctors and only recruited one junior doctor.

Particularly of note, my study has only included clinicians who are sufficiently engaged with medical education that they have education as part of their job description. I have not included clinicians who teach informally but do not consider education to be part of their role. Given that this group do the majority of teaching in clinical environments and hence would be more likely to be approached to complete FPs, including more of these clinicians may have offered me valuable insights into barriers faced by this group and how we as a medical school can engage them more effectively.

I have also not included students in years 1 or 2 as my research focussed on feedback-seeking in the clinical environment and, with the structure of the course at EMS, these students had significantly less patient contact and no hospital patient contact.

How representative participants were

My student interview participants only included students who were willing to speak to me. This may have been because they were more confident or because they had positive opinions about the FPs. In addition, they knew that I was responsible for implementing them and, as I am a clinician, they may have had concerns about the power imbalance and any repercussions if they were too negative about them. While they still made negative comments, I wonder if they may have been even more negative if I was not so involved in the FPs. I used questionnaires to allow students to give their views anonymously to help overcome this. While I had a good response rate for my student questionnaires, most likely the students who did not respond were less likely to log into their VLE homepage and read the messages, so were probably students who were less engaged.

My staff interviews only included clinicians and nurses who were formally involved in medical education and had a formal teaching role with the medical school. While they discussed barriers faced by their colleagues, I did not capture the full extent of these barriers first hand through the minds of clinicians who did more informal teaching. Unfortunately I had extremely low staff responses to my questionnaires. It is very likely that staff who responded either had extremely negative views which they wished to communicate, or were clinicians sufficiently involved with teaching to receive the email invitations to participate.

How I adhered to and deviated from constructivist grounded theory

Unlike grounded theory described by Glaser, Strauss and Corbin (Glaser, 1992; Glaser and Strauss, 1967; Strauss and Corbin, 1998), Charmaz (2014) recommends conducting a literature review before designing the research study to influence the design of the study and highlights gaps in knowledge (section 6.3). I tried to adhere to the recommendations by Charmaz. However, one of the limitations of this is that it can contaminate the researcher with preconceived ideas. Strauss (1990) later conceded the usefulness of a literature review before conducting the research and recommended using it to identify what is important in the emerging theory and to not allow it to impose on theory itself. I therefore used a number different themes which have not been used in studies in the literature, such as fear, which I found helped me to stay as close to my data as possible. Of note, although I tried to adhere to this recommendation as much as possible, feedback seeking is a rapidly developing topic and a number of relevant studies have been published since I competed my study. These therefore did not influence my study but helped me to understand my findings by understanding where they fit in relation to other studies.

Considering my ontological position (idealism), appreciating that I can only know realities of feedback-seeking experiences through the mind of feedback-seekers and feedback-givers, I tried to recruit a variety of feedback-seekers and feedback-givers to try to gain a better understanding of their realities. It should therefore be noted that such small numbers of certain groups, such as junior students, have limited my understanding of their reality.

Charmaz (2006) recommends initial sampling to generate initial themes, then using theoretical sampling to focus data collection and *"increase the analytical abstraction of theory by illuminating variation and identifying gaps"*. As discussed in section 7.3, I deviated from Charmaz's recommendations as I used a combination of convenience and purposive sampling in addition to theoretical sampling. While incorporating more theoretical sampling would have stayed closer to Charmaz's methodology, one of the conditions of my ethics approval was that I was unable to approach individual students to ask them to participate in my study. I therefore recruited students through placing invitations on the home page of the Visual Learning Environment website for all students in that year and students needed to volunteer to participate.

As a result, only students who were proactive enough to log onto their VLE and read their inbox and be confident enough to email me to volunteer would have participated. Hence my conclusions were drawn from data from students who were likely already more proactive and confident than others. Of note, my findings described proactivity and confidence as two of the promoters of feedback-seeking behaviour so this could have been influenced by the participating group.

I was only able to invite staff to participate if I had their contact details. Module leads also wished to approach clinicians teaching on their module themselves. This meant that only staff who were engaged with medical education and had a teaching role as part of their job (and so were paid to teach) participated.

If I was able to use theoretical sampling, I would have liked to include more junior students, which could help me further develop and test my theory about how feedback seeking develops. I would also have liked to include students who were less engaged, more junior doctors (especially foundation doctors) and other health professionals such as midwives, healthcare assistants and pharmacists. Recruiting staff who had a less formal role in medical education would have helped me to gain useful insights into how to promote feedback seeking with this group, which would have been helpful as they contribute a significant amount of informal teaching. In addition, recruiting students who were less engaged and underperforming may have also allowed me to gain useful insights.

Questionnaire response rates

My student questionnaires had 66% and 85% response rates, so I have used this data as significant enough to include. Questionnaire 3 had a 29% response rate but I have not used this to contribute to my thesis findings and have only referred to it in my introduction. Unfortunately, both staff questionnaires had a negligible response rate, with one only receiving 8 (out of a potential 50) responses and the other had even fewer. I therefore did not use the data to influence the design of the FPs. However, I have included these questionnaires as I used them to further explore themes in staff interviews, particularly the free text data from questionnaire 4. This helped me to address my second aim.

Use of volunteers

As my sampling strategy used volunteers, I collected data based on who was available to participate rather that selecting participants who could help me develop specific areas of my emerging theory. I was also unable to test some parts of my theory on, for example, other junior students. I also did not capture the realities of clinicians less interested in teaching, which would have helped improve the transferability of my findings.

21.13 My personal reflections

I reflected on my position as a trainee on a fellowship in the medical school and the impact of power and influence. While I viewed myself as a trainee with little influence and power, students considered me a member of the medical school faculty, so may have been reluctant to volunteer to participate in

interviews and be completely honest. I tried to account for this by also using anonymous questionnaires.

I also reflected on how much student and clinician input I had while developing the FPs. I found it challenging juggling the desires of students, the needs of the medical school and the opinions of clinicians on how the FPs should be implemented. At the time, it was difficult to know which was correct. However, in hindsight, the FPs would have been better received if I considered the views of students more and views of clinicians less. However, at the time I was a trainee with no real power in the medical school, so did not feel I had sufficient authority to refuse clinicians' requests. Some of these clinicians also taught me when I was a student, so may have influenced my views. I have certainly learnt a lot from this project, which is useful in my current education role.

21.14 Areas for future work

As with all research, these findings have led to further questions which are not addressed in this thesis and are areas for future work. Some of these should be prioritised ahead of others.

Exploring how to engage clinicians with teaching if they are less interested or do not have time for teaching- many students described perceiving clinicians did not have time for them and clinicians themselves described the competing demands of clinical activities, meaning teaching added to their stress. A priority should be exploring how learners and educational organisations can engage clinicians less interested in teaching to optimise students' short time attached to each specialty, and how students can overcome these barriers to get the most out of their attachment. Our students are their future trainees. Being too busy or disinterested in teaching and giving feedback can result in these clinicians potentially having underprepared trainees in the future, or poor recruitment to their specialty. It is therefore also in their interest that they consider how to overcome these barriers and consider teaching and training as important parts of their role. How to do this is an area for future work.

Another area for future research is comparing our findings to findings in other medical schools in the UK and even internationally. While we know that these findings reflect the realities of our students in EMS and have described the environment for the benefit of readers of this thesis, we have not confirmed how generalisable these findings are.

Medical schools have different numbers of medical students of different races and ethnicities, international students and postgraduate students. Compared to other medical schools in the UK, EMS has a large white British undergraduate population. Comparing the differences in feedback-seeking behaviour between British and International students, and students of different ethnicities, would

improve our knowledge of the enablers and barriers faced by these groups of students and if this contributes to the differences in attainment we see in these groups. This would be a useful and very current addition to our knowledge.

Consultants and postgraduate trainees are expected to seek feedback from patients and peers. There is very little in the literature on feedback-seeking from patients, including the impact of receiving feedback sought from patients and patients' views on this. Not only might this help prepare students for postgraduate training, it may be associated with different costs to self-esteem, image and professional identity if their identity revolves around being a medical student or doctor. Understandably this useful research may have its own challenges, including more rigorous ethically approved studies as they involve patients and whether feedback-training to patients is needed. However, it could also be a potentially lead to a useful quality improvement indicator for delivering patient care.

Other areas for future work include:

- How does feedback-seeking affect the value of feedback sought
- How can we improve the value of feedback sought
- Feedback-seeking from peers
- The relationship between feedback-seeking and self-regulated learning
- The relationship between feedback-seeking and other motivational theories, such as self-efficacy

21.15 Final Summary

This thesis has explored the influences of feedback-seeking in undergraduate learners in medical education, including the enablers and barriers of feedback-seeking and how a WPBA tool impacts on feedback seeking. Encouraging feedback-seeking can overcome some of the challenges educationalists experience with delivering effective feedback, and should be viewed as a learner-centred approach to smarter training.

Appendices

1. List of abbreviations

EMS   Edinburgh Medical School

FBS   Feedback-seeking

FBSB   Feedback-seeking behaviour

FP   Feedback Postcards

FY   Foundation Year doctor- can be FY1, FY2 or FY3, indicating they are in their 1st, 2nd or 3rd year of graduation respectively

GMC   General Medical Council

GO   Goal orientation

GP   General Practice

GT   Grounded theory

LGO   Learning goal orientation

MedEd   Medical Education

MO   Module Organiser

NHS   National Health Service

NSS   National Student Survey

O&G   Obstetrics and Gynaecology

OSCE   Objective Structured Clinical Examination

PG   Postgraduate

PGO   Performance goal orientation

SD   Self-determination

SDT   Self-determination theory

SML   Site Module Lead

SRL   Self-regulated learning

UG   Undergraduate

UoE   University of Edinburgh

WPBA   Workplace Based Assessment

2. Definitions

Term	Definition
Constructivist paradigm	The philosophical assumption that there are multiple realities which are subjective and emerge from my interpretation between the interactions between the researcher and the participants to co-create knowledge (Watling and Lingard, 2012)
Epistemology	Refers to the nature of knowledge and how we can learn about reality
Extrinsic motivation	The individual is driven to perform a task by an external driver, such as exam performance, or penalties if they do not complete a task, such as failing a module.
Feedback	In this thesis, feedback is defined as: " specific information about the comparison between a trainee's observed performance and a standard, given with the intent to improve the trainee's performance" (Van De Ridder *et al*., 2008). I have used the following terms: **Negative feedback**- identifies areas of underperformance but without information on how to improve **Constructive feedback**- identifies specific areas of underperformance and provides information on how to improve **Positive feedback**- identifies that performance is at (or above) the standard expected **Useful feedback** (what some educationalists call "strong " feedback)- Feedback which the learner found helpful, either to improve performance and change behaviour or for reassurance **Unhelpful feedback** (some educationalists call this "weak" feedback)- feedback which learners have not found useful
Feedback-seeking	Feedback-seeking (FBS) is when the learner attempts to actively determine the appropriateness and adequacy of their behaviour in order to achieve their goals , defined as "…conscious devotion of effort toward determining the correctness and adequacy of behaviours for attaining valued end states" (Ashford, 1986b)
Intrinsic motivation	The learner performs a task for personal interest or personal enjoyment, for community contribution, personal growth, health, affiliation or personal satisfaction

Learning GO (LGO):	The learner aims to acquire new skills and master new situations to develop competence. They remain engaged or even increase effort when faced with a challenging situation.
Ontology	Refers to beliefs and assumptions about the nature of the social world, in other words what is reality
Performance GO (PGO):	The learner aims to demonstrate and validate their competence, avoiding negative judgements. They perceive ability as fixed and aim to demonstrate their ability, potentially withdrawing or reducing effort when faced with a challenging situation (Dweck and Leggett, 1988).
Self-assessment	The process of the learner judging whether or not learner-identified standards have been met and identifying strengths and weaknesses (Boud, 2013), enabling the learner to consider if they are competent enough in a specific task. **Informed self-assessment** describes learners using internal self-assessment and external information, such as feedback, to generate a self-appraisal.
Self-assessment	The process of the learner judging whether or not learner-identified standards have been met and identifying strengths and weaknesses (Boud, 2013), enabling the learner to consider if they are competent enough in a specific task
Self-determination theory (SDT)	Intrinsic motivation is increased through feelings of autonomy, competence and belonging (Ryan and Deci, 2000). **Autonomy**- the individual is free to decide their own behaviour and actions **Competence**- the individual feels capable of performing a task based on their own confidence and self-assessment **Belonging or relatedness**- feeling accepted and valued by the social group, including peers, senior tutors and patients.
Self-esteem	The overall evaluation of one's worth, value or importance (Blascovich and Tomaka, 1991), and influences how someone responds to negative feedback.
Self-regulated learning (SRL)	The process of proactively monitoring the individual's own performance and learning, and seeking information and creating opportunities to learn to achieve academic goals. The learner creates feedback from their surroundings and the environment to monitor the effectiveness of their learning methods, reacting to this feedback and altering behaviour (Zimmerman, 1990, 1989a, 1989b).

The self-motives theory	Sedikides' (Sedikides and Strube, 1997) self-motives theory postulates that an individual is motivated through their desires for: **Self-assessment**: the individual FBS in order to obtain accurate information about their performance and ability to help them see themselves as they really are (i.e. diagnostic feedback). See below for more about self-assessment. **Self-improvement**: the individual FBS to improve their performance and ability. **Self-enhancement**: the individual FBS to present a favourable image to others and put themselves in a positive light, even if the feedback is inaccurate. **Self-verification**: seeking feedback to confirm their own views about their performance, for example individuals with high levels of certainty are more likely to seek this type of feedback (Anseel *et al.*, 2007b).

3. The Edinburgh Medical School MBChB Programme

Table 7 Overview of the Edinburgh Medical School Programme at the time of this research

YEAR	MODULES	CLINICAL EXPOSURE	PROGRAMME THEMES (STUDIED THROUGHOUT THE COURSE)
Principles of Practice			**Doctor as a Scholar and Scientist**
1	Cardiovascular, Respiratory, Locomotor, Ethics and Society	General Practice in the community	1. Biomedical Sciences
2	Neurosciences, Gastrointestinal, Genetics, Renal/urology, Endocrine Introduction to clinical practice	General practice in the community	2. Psychological Aspects of Medicine 3. Social Sciences and Public Health 4. Evidence-Based Medicine & Research
BSc	Optional Intercalation		
Process of Care			**Doctor as a Practitioner**
3	Cardiovascular, Respiratory, Gastrointestinal, Locomotor, Psychiatry	Hospital environment	5. The Consultation 6. Presentation, Diagnosis and Management
4	Haematology/ Oncology/Palliative Care, Breast Disease, Psychiatry, Neurosciences, General Practice, Renal/Urology, Dermatology, Ophthalmology and Ear/Nose/Throat, Obstetrics and Gynaecology	Hospital and General Practice	7. Clinical Communication 8. Emergency Care, Clinical and Resuscitation Skills 9. Clinical Pharmacology and Therapeutics 10. Medical Informatics
Preparation for Practice			**Doctor as a Professional**
5	Child Life and Health, General Practice, General Medicine, General Surgery, Medicine of the Elderly, Emergency Medicine, Anaesthetics/ Critical Care, Student Assistantship	Hospital and General Practice	11. Medical Ethics, Legal and Professional Responsibilities 12. Personal Professional Development

This is designed to be referenced alongside section 2.

4. Summary of papers reviewed

Below is an alphabetised summary of papers reviewed for this thesis. I also reviewed papers on studies of feedback seeking behaviour in general education and organisations, but due to reasons outlined in section 2, have only included papers on medical and veterinary education below. I have included papers from countries outside the UK. While I appreciate other countries have different training pathways (for example in some countries, medicine is a postgraduate degree), feedback seeking is a relatively new research topic in medical education and there has been a significant number of rigorous research studies originating in the Netherlands and America. Furthermore, while some countries have different cultures, which could impact on feedback seeking behaviour (although this has not been studied, Edinburgh Medical School has a small but not insignificant number of students from the Far East, especially Malaysia. This table does not include organisations, school education, higher education that is not medical education and osteopathy. It does include undergraduate, postgraduate, medical, veterinary and nursing education.

Table to summarise papers used

	Paper	Rating according to criteria		Quality	Key paper
1	(Al-Mously *et al.*, 2014b)	**Undergraduate medical students' perceptions on the quality of feedback received during clinical rotations**		Average	No

Criteria		Score
1	Clear research question/hypothesis	1
2	Appropriate study group	1
3	Reliable/valid data collection methods	1
4	Completeness of data	1
5	Control for confounding factors/ variables	0
6	Appropriate analysis of results	1
7	Conclusion justified by data	1
8	Reproducible by other researchers	0
9	Prospective rather than retrospective	0
10	Ethical issues addressed	0
11	Are results supported by data from more than one source	1
12	Supported by other studies	1

		Total		8	

<table>
<tr><td colspan="4">Summary:

Middle East. UG med ed. Quantitative. Cross sectional observational study. Questionnaires to 5th and 6th year students. Designed to evaluate quality and quantity of feedback received, rather than FBSB. Good response rate. 53-66% of students reported they do not receive feedback and only a small proportion of these felt they got corrective feedback on patient encounters. 85% of 5th years and 94% of 6th years self-reported they do not seek fb. This is different to (Murdoch-Eaton and Sargeant, 2012).

Quality: good but focussed on feedback than FBSB.</td></tr>
</table>

Summary:

Middle East. UG med ed. Quantitative. Cross sectional observational study. Questionnaires to 5th and 6th year students. Designed to evaluate quality and quantity of feedback received, rather than FBSB. Good response rate. 53-66% of students reported they do not receive feedback and only a small proportion of these felt they got corrective feedback on patient encounters. 85% of 5th years and 94% of 6th years self-reported they do not seek fb. This is different to (Murdoch-Eaton and Sargeant, 2012).

Quality: good but focussed on feedback than FBSB.

| 2 | (Bing-You *et al.*, 2018) | **The Art (and Artifice) of Seeking Feedback: Clerkship Students' Approaches to Asking for Feedback** | | Good | Yes |

Criteria		Sc
1	Clear research question/hypothesis	1
2	Appropriate study group	1
3	Reliable/valid data collection methods	1
4	Completeness of data	1
5	Control for confounding factors/ variables	0
6	Appropriate analysis of results	1
7	Conclusion justified by data	1
8	Reproducible by other researchers	1
9	Prospective rather than retrospective	1
10	Ethical issues addressed	1
11	Are results supported by data from more than one source	0
12	Supported by other studies	1
	Total	10

Qualitative. Students. America. 14 year 3 students

Clear outline of data collection and analysis. No triangulation.

FBS motivated by GO, perceived benefits, students feeling comfortable, faculty spontaneously giving feedback without being sought, trusting faculty.

Deterred by perceived costs (did not explore what these were), not wanting to bother people, busy environments.

Did not find direct observation cards useful to FBS as formal

Quality: good, but did not go into depth about why these were deterrents or enablers. American students do medicine as a 2nd degree so will be more mature.

3	(Bok *et al*., 2013b)	**Clarifying students' feedback-seeking behaviour in clinical clerkships**		Good	Yes

Criteria		Score
1	Clear research question/hypothesis	1
2	Appropriate study group	1
3	Reliable/valid data collection methods	1
4	Completeness of data	1
5	Control for confounding factors/ variables	1
6	Appropriate analysis of results	1
7	Conclusion justified by data	0
8	Reproducible by other researchers	1
9	Prospective rather than retrospective	1
10	Ethical issues addressed	1
11	Are results supported by data from more than one source	0
12	Supported by other studies	1
	Total	10

<table>
<tr><td colspan="5">Exploratory qualitative study of FBSB. Y5 and 6 UG vet students in Netherlands. Qualitative. 14 participants. Clearly outlined methodology and methods.

Found that FBS was motivated by intentions of the student (demonstrating competence and responsibility to patient), personal characteristics (mental well-being, ego, and image), perceived feedback benefits, characteristics of the supervisor. Initially sought feedback on specific tasks, which then developed into general competencies. Postponed FBS if concerned about potential costs to ego. Used monitoring to explicitly ask for feedback, or inquiry if concerned it might make them look incompetent. Concluded that FBSB can be categorised into source, topic, timing, frequency, and method.

However, no triangulation and authors unsure if they reached saturation. This is probably because their topic was too broad. Aligns well with other researchers' findings.

Quality: Good</td></tr>
</table>

4	(Bok *et al.*, 2016)	**Feedback-giving behaviour in performance evaluations during clinical clerkships**	Average	Yes

Criteria		Score
1	Clear research question/hypothesis	1
2	Appropriate study group	1
3	Reliable/valid data collection methods	0
4	Completeness of data	1
5	Control for confounding factors/ variables	0
6	Appropriate analysis of results	1
7	Conclusion justified by data	1
8	Reproducible by other researchers	1
9	Prospective rather than retrospective	1

10	Ethical issues addressed	0	
11	Are results supported by data from more than one source	0	
12	Supported by other studies	1	
	Total	8	

Although marked as good, note the issues with using WPBA forms as a way of exploring feedback-giving. Appreciate the paper states that the WPBAs were used formatively they have acknowledged, and it is well described in the literature, that this is not always the case in reality

Summary: Qualitative. Interviews with 14 teachers in Vet medicine. Netherlands.

Explored how they use low-stakes miniCEXs to give feedback. Clear outline of methods and rationale for this. Only looks at feedback-giving in a formal setting on a mini-CEX, does not explore informal feedback-giving which is not written down or used purely formatively. This is sometimes more likely if the receiver has completed all their miniCEX forms or if the giver wishes to give constructive feedback but does not wish to fail the student.

Selected participants for maximum variation of experience (between 2 – 26 years of experience) and specialty. Audio-recorded and transcribed. Theoretical saturation reached by 12th transcript but did a further 2 to confirm. However, themes are self-reported by teachers, don't triangulate e.g. with student perspective. Didn't describe how they checked analysis and coding. Authors analysed using themes drawn from the literature- to what extent did the literature contaminate their analysis? Charmaz advises doing a literature search

		beforehand but they authors' analysis were heavily influenced.		
		Found that WPBA more likely to be used in the interned way if supportive relationship, students sought feedback and students feeling comfortable enough to be part of the team. FBS enabled by teachers making it clear it was ok to make mistakes. Suitable conclusions.		
		Quality: good. Also acknowledged that WPBA can be initiated by teachers, not just students- other studies have used it as a measure of FBS (De Jong, Gaunt etc.)		
5	(Bose and Gijselaers, 2013)	**Why supervisors should promote feedback seeking behaviour in medical residency**	Poor	No

Criteria		Score
1	Clear research question/hypothesis	1
2	Appropriate study group	1
3	Reliable/valid data collection methods	0
4	Completeness of data	0
5	Control for confounding factors/ variables	0
6	Appropriate analysis of results	1
7	Conclusion justified by data	0
8	Reproducible by other researchers	1
9	Prospective rather than retrospective	1
10	Ethical issues addressed	1
11	Are results supported by data from more than one source	0
12	Supported by other studies	0
	Total	6

Quantitative. Swiss postgraduate trainees. Explores goal orientation as a motivator to FBS. Extremely small, low

| | | 45% response rate (only 56 trainees), especially considering this was a web-based questionnaire survey. Residents were disillusioned so may be more likely to be negative. Did not discuss qualitative data as well, unclear why not. FBSB was more likely if reduced concerns about ego protection and impression defence, which was more likely in performance-avoid GO (unlike findings from Janssen 2010). Women were more likely to be concerned with ego protection and senior trainees to be concerned with impression defence, but extremely small numbers for a quantitative study.

They also interviewed 19 postgraduate trainees to explore why they had such low participation, but do not describe how they analysed the data from their interviews and how they developed their findings. From their quantitative data, they concluded that women were less goal-orientated but were more concerned about ego protection. However, they only had 29 females participating so this is unlikely to be statistically significant. They also concluded that more experienced trainees were motivated by impression-defence. They found a statistically significant correlation between feedback seeking using the inquiry method and perceived promotion of feedback seeking by supervisors. Supervisors promoting feedback seeking also reduced concerns about ego protection and impression defence. They found no association with GO, but appreciated that their results were inconclusive due to the small scale of the study. The findings from this study are from self-reported data and the authors acknowledge that they could be distorted due to disillusionment among their trainees, and lack of time to respond thoroughly to their questionnaire due to clinical commitments | | |

6	(Bowen *et al.*, 2017a)	**Medical Student Perceptions of Feedback and Feedback Behaviours Within the Context of the "Educational Alliance"**	Average	Yes

Criteria		Score
1	Clear research question/hypothesis	1
2	Appropriate study group	0
3	Reliable/valid data collection methods	1
4	Completeness of data	1
5	Control for confounding factors/ variables	0
6	Appropriate analysis of results	1
7	Conclusion justified by data	1
8	Reproducible by other researchers	1
9	Prospective rather than retrospective	1
10	Ethical issues addressed	0
11	Are results supported by data from more than one source	0
12	Supported by other studies	1
	Total	8

Note rigorous methodology which has been clearly described. No triangulation however.

Summary: Undergrad UK medical students. Qualitative. 5 focus groups, one in each year, to explore feedback beliefs. Explored learners recognizing, using, and seeking feedback. Grounded theory study to investigate how they recognise, seek and use feedback. The authors used purposive sampling to select 25 students into 5 focus groups, based on their characteristics, representing each year group.

		Findings: FBS was influenced by learner beliefs, attitudes, and perceptions; relationships; teacher attributes; mode of feedback; and learning culture.		
		Senior students were more likely to consciously FBS and perceived it to be more valuable, while junior students viewed themselves as recipients of feedback and perceived passive feedback was "*better*" because it was given without asking for it. Junior students felt it was the medical school's responsibility to motivate them to use feedback and thought engaging with feedback should be incentivised, while senior students were more likely to be self-directed when using the feedback.		
		Detailed description of how they ensured methodological rigour, such as audio-recording and transcribing focus group data, having an assistant take field notes, using constant comparison to revisit emerging themes, discussing them with other members of the research team and testing her conceptual model against her data. However, they did not describe which characteristics participant selection was based on. To be truly representative, they would not just need to be based on sex and ethnicity but also whether they were an undergraduate or postgraduate entry into medical school and whether their personalities and academic performance were representative of the rest of the year. Given these number of variables, it is unlikely they selected for all of these with 5 students in each group. Didn't consider postgraduate students, students from different cultures, gender biases which could have impacted on data, as only 5 students per year. They also did not triangulate data.		
7	(Cahill *et al.*, 2015)	**'I wouldn't get that feedback from anywhere else': learning partnerships and the use of high school**	Insufficient relevance	No

		students as simulated patients to enhance medical students' communication skills. Did not score- insufficient relevance. Paper focusses on simulation communication skill rather than feedback seeking.		
8	(Cassidy *et al.*, 2017)	**'Seeking authorization': a grounded theory exploration of mentors' experiences of assessing nursing students on the borderline of achievement of competence in clinical practice.** Did not score- insufficient relevance. Focussed on mentors rather than learners. Exploring how nurses decide to fail borderline students, little on feedback seeking.	Insufficient relevance	No
9	(Chaudhry *et al.*, 2019)	**Perioperative Teaching and Feedback: How are we doing in Canadian OTL-HNS programs?**	Poor	No

Criteria		Score
1	Clear research question/hypothesis	1
2	Appropriate study group	0
3	Reliable/valid data collection methods	0
4	Completeness of data	0
5	Control for confounding factors/ variables	0
6	Appropriate analysis of results	0
7	Conclusion justified by data	0
8	Reproducible by other researchers	1
9	Prospective rather than retrospective	1
10	Ethical issues addressed	1
11	Are results supported by data from more than one source	1
12	Supported by other studies	1

| | | | Total | 6 | | |

Postgraduate surgical trainees. Canada. Quantitative questionnaire to trainees and staff- self reported Likert scales. Clear and valid inclusion and exclusion criteria. Don't say what the response rate was, just how many responded- they say they have no way of knowing this but there will be a set number of training numbers allocated. Considering how many are likely to be eligible to Participate, they had a low response rate. Unlikely to have sufficient power for their results to be statistically significant although the authors say they were on 11 variables. Some of this data would be better collected qualitatively. Insufficient detail on analysis of free text qualitative data.

Quality: poor. Focusses on teachers giving feedback, very little on receiving feedback. Lots of conclusions drawn but not all supported by the design. While they gathered data from more than one source, they do not make reliable conclusions from each of these sources.

10	(Crommelinck and Anseel, 2013a)	**Understanding and encouraging feedback-seeking behaviour: a literature review**		Good	Yes

Criteria		Score
1	Clear research question/hypothesis	1
2	Appropriate study group	1
3	Reliable/valid data collection methods	1
4	Completeness of data	1
5	Control for confounding factors/ variables	/
6	Appropriate analysis of results	1
7	Conclusion justified by data	1
8	Reproducible by other researchers	1
9	Prospective rather than retrospective	/
10	Ethical issues addressed	/

			11	Are results supported by data from more than one source	1		
			12	Supported by other studies	1		
				Total	9		

Narrative review of literature on benefits of FBS, antecedents of FBS, viewing FBS through the self-motives framework (self-assessment, self-verification, self-improvement, self-enhancement) and what promotes FBSB. Combines latest (at the time of writing) research in med ed and puts in context of research in organisations and general educational context. No search strategy outlined, did not identify data bases/inclusion/exclusion criteria. Highlights lack of research in medical education as many of the studies are in organisations and higher education and gives a good summary of this.

Quality: Good considering there was little published on FBS in medical education at the time of writing.

1 1	(de Jong *et al.*, 2017)	**Students' motivation toward feedback-seeking in the clinical workplace**				Poor	No-published too late
			Criteria		Score		
			1	Clear research question/hypothesis	1		
			2	Appropriate study group	0		
			3	Reliable/valid data collection methods	0		
			4	Completeness of data	0		
			5	Control for confounding factors/ variables	0		
			6	Appropriate analysis of results	0		
			7	Conclusion justified by data	0		
			8	Reproducible by other researchers	1		
			9	Prospective rather than retrospective	1		
			10	Ethical issues addressed	1		

11	Are results supported by data from more than one source	1
12	Supported by other studies	0
	Total	5

Summary: Final year vet students in Netherlands. Measured no of WPBAs students completed against performance at end of summative assessment in 87 students, then used a self-reported motivation qnairre to identify their motivation. Qnairre had poor response rate (46%) after dropouts. Very small numbers- 87 students divided into three groups (low, average, high performing) which they compared. Do not discuss whether these three groups were sufficient for statistical significance.

Controversial assumptions made by authors:

Measured fbs by counting no of WPBA forms students collected. However, students needed to complete a minimum number. Forms were quantitative and qualitative feedback- so they got a numerical grade. Authors don't state how much these feedback forms contribute towards the summative grade, just that the students are graded summatively at the end.

Authors report that in most cases students ask for forms to be completed – but how many is most cases? How do they differentiate forms being requested by staff from requested by students? This is different to my experiences in the UK. Also different to literature on WPBA in UK, which is why they are considered "tick box" exercises.

Students classed as low, medium or high performing based on summative assessment but no discussion on the utility of this assessment.

		They also made the assumption that no of WPBAs completed indicated level of motivation to FBS. Don't account for multiple other confounding factors described in WPBA literature, such as staff availability etc. Study conclusions don't line up with what the design can do. Quality: Poor design. Don't line up with conclusions. Too many assumptions.		
1 2	(Delva *et al.*, 2013)	**Encouraging residents to seek feedback.**	Good	Yes

Criteria		Score
1	Clear research question/hypothesis	1
2	Appropriate study group	1
3	Reliable/valid data collection methods	1
4	Completeness of data	0
5	Control for confounding factors/ variables	1
6	Appropriate analysis of results	1
7	Conclusion justified by data	1
8	Reproducible by other researchers	1
9	Prospective rather than retrospective	1
10	Ethical issues addressed	1
11	Are results supported by data from more than one source	1
12	Supported by other studies	1
	Total	11

Qualitative. Semi-structured interviews and FG with 10 residents and 8 faculty. Explored Canadian senior residents' and faculty's perceptions of trainees' FBS, faculty encouraging FBS, barriers or concerns perceived in the feedback exchange from their respective perspectives, and suggestions for supporting feedback-seeking.

		Clear description of how they maintained rigour using team meetings to discuss and compare themes and interpretations. 2 trained facilitators conducted the focus groups (how were they trained though?), the second one was from a specialty not represented by the FGs to prevent bias. Limitations: One institution, senior residents, only 4 focus groups (2 residents and 2 faculty) were felt to be enough to reach saturation, didn't speak to faculty and residents together to explore conflicts between perceptions. Felt residents would be open if they spoke around their peers. Concluded that FBS was promoted by a culture which normalises FB, feeling supervisors were interested in helping them learn rather than just providing a service, positive relationship with supervisors. FBs was inhibited by faculty's lack of time, poor credibility and unhelpful FB provided due to insufficient observation, fear of negative feedback or demonstrating lack of competence. Faculty felt residents should be expected to take responsibility for FBS but residents were discouraged by infrequent FB and summative assessments. Time was a barrier for faculty. Quality: good. Appropriate design and conclusions. drawn		
1 3	(Fu *et al.*, 2019)	**'I did not check if the teacher gave feedback': a qualitative analysis of Taiwanese postgraduate year 1 trainees' talk around e-portfolio feedback-seeking behaviours** <table><tr><td colspan="2">Criteria</td><td>Score</td></tr><tr><td>1</td><td>Clear research question/hypothesis</td><td>1</td></tr><tr><td>2</td><td>Appropriate study group</td><td>1</td></tr><tr><td>3</td><td>Reliable/valid data collection methods</td><td>1</td></tr><tr><td>4</td><td>Completeness of data</td><td>1</td></tr></table>	Good	No – too late

5	Control for confounding factors/ variables	1
6	Appropriate analysis of results	1
7	Conclusion justified by data	1
8	Reproducible by other researchers	1
9	Prospective rather than retrospective	1
10	Ethical issues addressed	0
11	Are results supported by data from more than one source	0
12	Supported by other studies	1
	Total	10

Taiwan. Postgrad trainees. Looking at how they used their e-portfolio to FBS.

Approached trainees and 71 participated. Started the study when they had barely started to engage with their e-portfolio (so would not be as helpful) but continued until towards the end of the training course (how long was this?). Otherwise, clear rigorous description of methodology and analysis.

Similar concerns to the De Jong 2017

Conclusions:

FBS using eportfolio were divided into learner focussed, teacher focussed, technology focussed and process focussed factors. Inhibitors included poor learning needs assessment, emotional reactions about teachers, delayed or generic feedback, poor user interface with technology, forgetting, repetition and workload. Enablers included value of feedback, value of teachers, relevance of feedback, staff dedication to teaching and online v face to face (online was face-saving). Technology issues affected learners' engagement

However:

		Portfolios were compulsory to complete – this will influence FBS as influences GO. Doesn't account for changing behaviours the longer they engaged with eportfolio, or after supervision meetings to see the value of the eportfolio, or how effective supervisors were. Clear logical conclusions drawn. Quality: very good. But Taiwanese population (different training and culture to UK), postgraduate, technology issues affected learners' engagement and therefore their FBSB. So this paper is more about then general FBSB, although also useful for my study.		
1 4	(Garner *et al.*, 2014a)	**The positive effect of immediate feedback on medical student education during the surgical clerkship.** | Criteria		Score
---	---	---
1	Clear research question/hypothesis	1
2	Appropriate study group	0
3	Reliable/valid data collection methods	0
4	Completeness of data	0
5	Control for confounding factors/ variables	0
6	Appropriate analysis of results	0
7	Conclusion justified by data	0
8	Reproducible by other researchers	1
9	Prospective rather than retrospective	1
10	Ethical issues addressed	0
11	Are results supported by data from more than one source	1
12	Supported by other studies	1
	Total	5 | American. Quantitative. UG medical education. Crossover study- students sought FB from surgeons for 2 weeks,	Poor	No

then stopped FBS for 2 weeks, then repeated this cycle. Weekly quantitative surveys to students and staff. Described perceived benefits of FBSB.

However, only 33 students- unlikely to be sufficiently powered for a quantitative study, but reported difficulties with recruiting more students. Does not account for students developing FBSB through experiences of their previous 2 weeks, and would be more likely to FBS further if they found it useful- it is likely that they would prioritise learning over sticking rigorously to the study protocol, and this doesn't explore if students FBS when they weren't supposed to. Doesn't take into account feedback spontaneously received or changes in FBS, which might have developed in students who sought feedback in the first arm. Also doesn't account for a culture change from previous FBSB where staff would be more likely to give feedback. Poor to reasonable participation in second year (51%) which reduced considerably in fourth year so they did not include this data in the study. However, they also do not explore why participation was so low in senior students and did not discuss how rigorously they pursued students who dropped out. They did include third year students in the study but do not account for the development of FBSB demonstrated in subsequent studies, such as (Murdoch-Eaton and Sargeant, 2012).
Crossover study is not the best design for my study.
Quality: poor. Not a suitable design for research qn.
Insufficient numbers to draw suitable conclusions.

15	(Gaunt *et al.*, 2017a)	**Surgical trainee feedback-seeking behaviour in the context of workplace-based assessment in clinical settings**	Average	Yes

Criteria		Score
1	Clear research question/hypothesis	1
2	Appropriate study group	1
3	Reliable/valid data collection methods	1
4	Completeness of data	1
5	Control for confounding factors/ variables	0

6	Appropriate analysis of results	1
7	Conclusion justified by data	1
8	Reproducible by other researchers	1
9	Prospective rather than retrospective	1
10	Ethical issues addressed	0
11	Are results supported by data from more than one source	0
12	Supported by other studies	1
	Total	9

Summary: PG surgical trainees, quantitative questionnaire. UK. Very good response rate (76%). Validated questionnaire.

Used a conceptual model they already developed from organisational psychology literature- can't always apply organisational psychology to education or med ed however.

Found positive statistically significant relationship between feedback benefits, and feedback monitoring and inquiry but no association between perceived costs and FBS through monitoring or inquiry. No association with GO and perceived feedback costs/benefits, but performance GO is associated with high personal cost. If the supervisor was perceived to be supportive, trainee perceived low personal costs. Learning GO correlated with supportive, instrumental supervision and performance GO negatively correlated with supportive trainers.

Quality: Good. But used pre-developed model from FBS in organisations rather than education / med ed. Assumes WPBA were completed though trainee FBS rather than staff asking to complete one.

1 6	(Gaunt *et al.*, 2017b)	'Playing the game': How do surgical trainees seek feedback using workplace-based assessment?	Good	No

	Criteria	Score
1	Clear research question/hypothesis	1
2	Appropriate study group	1
3	Reliable/valid data collection methods	1
4	Completeness of data	1
5	Control for confounding factors/ variables	1
6	Appropriate analysis of results	1
7	Conclusion justified by data	1
8	Reproducible by other researchers	1
9	Prospective rather than retrospective	1
10	Ethical issues addressed	0
11	Are results supported by data from more than one source	0
12	Supported by other studies	1
	Total	10

Qualitative UK study, PG surgical trainees. Exploring how they FBS using WPBAs. 42 trainees, 10 FGs. Different levels of experience. Explored themes gathered from previous quantitative analysis – triangulated with these. Clear description of how they analysed data, but tried to fit data into previously generated themes (bias). Did get some new themes as well. But stated that their themes emerged.

Trainees used WPBA as a way to "gather feedback" – but does this mean seek feedback or just collect feedback? How did they come up with FBS? Found some trainees sought feedback immediately as had more value, while others waited until they knew they had performed a task well to FBS.

| 1 6 | (Gaunt *et al.*, | | | |

		Could be more reflexive on author's power as a senior surgical trainee when facilitating focus groups of junior trainees. Quality: Good. But not all themes were developed from data.		
1 7	(Gaunt *et al.*, 2018)	**Exploring the Role of Self-Motives in Postgraduate Trainees' Feedback-Seeking Behaviour in the Clinical Workplace**	Average	No

Within cell 17, the following table appears:

Criteria		Score
1	Clear research question/hypothesis	1
2	Appropriate study group	1
3	Reliable/valid data collection methods	1
4	Completeness of data	1
5	Control for confounding factors/ variables	0
6	Appropriate analysis of results	1
7	Conclusion justified by data	1
8	Reproducible by other researchers	1
9	Prospective rather than retrospective	1
10	Ethical issues addressed	1
11	Are results supported by data from more than one source	0
12	Supported by other studies	0
	Total	9

Qualitative study. UK. 42 surgical trainees in 10 FGs.

Used the self-motives framework to explore how they FBS using WPBA. Some themes were decided before the analysis and some emerged.

Concluded that trainees who have a positive relationship with staff FBS due to self-assessment and self-improvement motives, and they use WPBA to FBS for self-enhancement and self-verification. Trainees who don't

		use WPBA seek feedback due to self-improvement and self-assessment motives. Clear conclusions from data presented. Quality: good. But no triangulation and themes were preconceived. PG trainees of different levels, rather than UG students.		
18	(Gratrix and Barrett, 2017)	**Desperately seeking consistency: Student nurses' experiences and expectations of academic supervision.**	Average	No

Criteria		Score
1	Clear research question/hypothesis	0
2	Appropriate study group	0
3	Reliable/valid data collection methods	0
4	Completeness of data	1
5	Control for confounding factors/ variables	0
6	Appropriate analysis of results	0
7	Conclusion justified by data	1
8	Reproducible by other researchers	1
9	Prospective rather than retrospective	1
10	Ethical issues addressed	1
11	Are results supported by data from more than one source	0
12	Supported by other studies	1
	Total	6

Summary: Qualitative. 8 final year nursing students. Explored student nurses' expectations and experiences of supervision on written work, rather than in the workplace. Clear description of sampling and methodology used. Only one focus group. No triangulation. Insufficient information on data collection and analysis. Unlikely to have reached saturation. Concluded that trusting relationship between student

		and mentor promoted FBS. Unsuccessful FBS attempts and experiencing negative responses inhibited further FBS.		
		Quality: Overall ok But no triangulation. Supervision and feedback on written work rather than in a workplace environment. One of the few papers on this subject in nursing education so included.		
1 9	(Henry *et al.*, 2018)	**Motivation for feedback-seeking among pediatric residents: a mixed methods study**	Poor	No

Criteria		Score
1	Clear research question/hypothesis	0
2	Appropriate study group	0
3	Reliable/valid data collection methods	0
4	Completeness of data	0
5	Control for confounding factors/ variables	0
6	Appropriate analysis of results	0
7	Conclusion justified by data	0
8	Reproducible by other researchers	1
9	Prospective rather than retrospective	1
10	Ethical issues addressed	0
11	Are results supported by data from more than one source	1
12	Supported by other studies	0
	Total	3

Summary: Qualitative and quantitative study exploring how FBS is associated with self-determination and other influences of FBS. Implemented a simulation training programme and gave trainees the opportunity to FBS through asking online for written feedback on performance and seeking a 30min face-to-face feedback session. Intrinsic Motivation Inventory questionnaire.

		Clear exclusions. 34 participated (out of 43). Only 10 eventually participated in face-to-face feedback (23%). Did not clearly describe how they collected and analysed qualitative data, no explanation of how they maintained rigour. Put them into preconceived themes of self-determination. Quality: poor. Very small numbers for quantitative study, no clear rigour for qualitative study, no triangulation. Did not interview trainees who did not choose to engage with feedback or simulation programme – very select sample. These learners would likely be very motivated for everything. Very few studies done on this area in this population however.		
2	(Hofmann *et al.*, 2009)	**Seeking help in the shadow of doubt: the sense making processes underlying how nurses decide whom to ask for advice.** 146 nurses "seeking help". Abstract has insufficient detail and unable to retrieve full article so unable to score.	N/A Unable to retrieve	N/A
2 1	(Ingwersen *et al.*, 2017)	**Perceptions of fieldwork in occupational therapy.** Clin Teach. 2017 Feb;14(1):55-59. doi: 10.1111/tct.12518. Epub 2016 Apr 5.	Poor	No

Criteria		Score
1	Clear research question/hypothesis	0
2	Appropriate study group	0
3	Reliable/valid data collection methods	0
4	Completeness of data	0
5	Control for confounding factors/ variables	0
6	Appropriate analysis of results	1
7	Conclusion justified by data	0
8	Reproducible by other researchers	0
9	Prospective rather than retrospective	1
10	Ethical issues addressed	0

		11	Are results supported by data from more than one source	0	
		12	Supported by other studies	1	
			Total	2	

Questionnaire study, only 17 OT students and 23 OT supervisors.

Quality: poor. Mostly details OT students' perceptions of placements but a small amount on feedback seeking (OT supervisors seeking feedback from their students). None about OT students seeking feedback from supervisors. Poor quality and little relevance.

2 2	(Janssen and Prins, 2007a)	**Goal orientations and the seeking of different types of feedback information.**	Average	Yes

Criteria		Score
1	Clear research question/hypothesis	1
2	Appropriate study group	1
3	Reliable/valid data collection methods	1
4	Completeness of data	0
5	Control for confounding factors/ variables	0
6	Appropriate analysis of results	1
7	Conclusion justified by data	0
8	Reproducible by other researchers	0
9	Prospective rather than retrospective	1
10	Ethical issues addressed	0
11	Are results supported by data from more than one source	0
12	Supported by other studies	1
	Total	6

		170 Dutch medical residents (55% response rate). Questionnaire survey. Quantitative, using a validated scale. Explored how goal orientations influenced how residents FBS. Trainees had either a positive or a negative attitude towards seeking self-improvement and self-validation information depending on their GO. Learning GO more likely to FBS for self-improvement. Performance-avoid GO was positively related to seeking self-improvement information (unlike findings from Bose 2013). Quality: average. Authors hypothesised this was possibly because of the fear of performing worse than others, but study was not designed to confirm this. Other flaws- self reported. Focussed on FBS for self-improvement or self-validation but did not consider FBS to avoid loss of competence (learning-avoidance) or performance-approach GO. Being a quantitative study, it doesn't explore why they got these results.			
2	(Mann *et al.*, 2011a)	**Tensions in informed self-assessment: how the desire for feedback and reticence to collect and use it can conflict.**	Good	Yes	

Criteria		Score
1	Clear research question/hypothesis	1
2	Appropriate study group	1
3	Reliable/valid data collection methods	1
4	Completeness of data	1
5	Control for confounding factors/ variables	1
6	Appropriate analysis of results	1
7	Conclusion justified by data	1
8	Reproducible by other researchers	1
9	Prospective rather than retrospective	1
10	Ethical issues addressed	0

11	Are results supported by data from more than one source	1
12	Supported by other studies	1
	Total	11

Summary: Qualitative study, GT, 17 FG (134 participants)

Exploring tensions informing self assessment

UG and PG. 5 different countries. Rigorous description of data analysis, detailed description of methodology.

Concluded tensions were within self, between peers and within learning environment.

Desire to inform self-assessment conflicted with learners' desire for feedback v fear of negative or critical information not wanting to look incompetent, not trusting feedback received and needing a safe relationship to receive feedback.

Quality: Rigorous methodology, no clear description of triangulation and study was designed to explore self-assessment – so doesn't say much about FBS. Triangulated between different sites. Extremely large study for the themes they drew out, not clear why so many were needed to reach saturation.

---

2 4 (McGhee *et al.*, 2017)

Do Emergency Medicine Residents Prefer Resident-initiated or Attending-initiated Feedback?

Poor — No

Criteria		Score
1	Clear research question/hypothesis	1
2	Appropriate study group	0
3	Reliable/valid data collection methods	0
4	Completeness of data	0
5	Control for confounding factors/ variables	0
6	Appropriate analysis of results	0
7	Conclusion justified by data	0

		8	Reproducible by other researchers	1		
		9	Prospective rather than retrospective	1		
		10	Ethical issues addressed	0		
		11	Are results supported by data from more than one source	0		
		12	Supported by other studies	1		
			Total	4		

Summary: America, 5 sites, Emergency Medicine trainees. Explored effect of implementing feedback cards- quantitative. Trainees rated satisfaction with it to "initiate" feedback and if it was initiated by them or the feedback-giver. Analysed data on the cards, only used 77% of them due to missing data. Just measured resident satisfaction. Only 59% of resident-initiated feedback was rated as satisfactory. Did not consider how many were statistically significant, didn't consider the utility of the cards as a tool, the feedback received etc.

2 5	(Milan *et al*., 2011)	**How am I doing?" Teaching medical students to elicit feedback during their clerkships.**			Average	No
		Criteria		Score		
		1	Clear research question/hypothesis	1		
		2	Appropriate study group	1		
		3	Reliable/valid data collection methods	1		
		4	Completeness of data	1		
		5	Control for confounding factors/ variables	0		
		6	Appropriate analysis of results	0		
		7	Conclusion justified by data	1		
		8	Reproducible by other researchers	0		
		9	Prospective rather than retrospective	1		
		10	Ethical issues addressed	0		

		11	Are results supported by data from more than one source	0	
		12	Supported by other studies	1	
			Total	7	

American. 182 year 3 medical students. Studying if a workshop on seeking feedback made students more likely to FBS. Half participated in a workshop on how to FBS. Questionnaire before and after workshop rating frequency of FBS and three qualitative questions (95% response rate). Described analysing quantitative data but state qualitative data was analysed using "standard qualitative procedures", which they describe as coding by two different people. Don't describe any other ways of maintaining qualitative rigour, the methodology used or how it was analysed. The intervention group self-reported they were more prepared to and more likely to FBS after the workshop. Reported that feedback was usually only given at request. Students' attitudes to FBS was a bigger promoter than previous experiences. Most cited staff approachability as a barrier, with a few citing staff competence at giving feedback and anxiety about negative feedback.

Quality: Fine. Clear quantitative analysis but qualitative methodology not clearly described or rigorous enough to be great.

2	(Murdoch-Eaton and Sargeant, 2012)	**Maturational differences in undergraduate medical students' perceptions about feedback: Maturation in feedback perception.**			Good	Yes

Criteria		Score
1	Clear research question/hypothesis	1
2	Appropriate study group	1

3	Reliable/valid data collection methods	1
4	Completeness of data	1
5	Control for confounding factors/ variables	1
6	Appropriate analysis of results	1
7	Conclusion justified by data	1
8	Reproducible by other researchers	1
9	Prospective rather than retrospective	1
10	Ethical issues addressed	1
11	Are results supported by data from more than one source	1
12	Supported by other studies	0
	Total	11

Note their findings are not supported by other studies- criteria 12. However, this demonstrates this is new knowledge generated by this study therefore useful.

Summary: Qualitative and quantitative study. UK, UG.

68 students in 10 FGs, triangulated with quantitative questionnaires (only 48% response rate). Across all 5 years of a course. FG, then questionnaire, then further FG. FG were triangulated with quantitative questionnaires to explore themes from the focus groups. They then conducted a final set of focus groups to look at themes from the first two data collection stages. Focus groups were facilitated by an independent educationalist rather than faculty so that students were more likely to share their real perspectives. While Bowen's study only used focus groups of a total of 25 students, which did not account for all variables in ethnicity, gender etc., this study used questionnaires to sample a larger population in addition to focus groups. This helped establish if the views held by focus group participants were the views of an interested and motivated minority of students who

		volunteered to participate or if they were more widely held.			
		Findings: Students transitioned from passively expecting feedback from teachers to actively seeking and using feedback to change their learning as they became more senior. Concluded that students transitioned from passive feedback recipients and passively being told what to do by the feedback, to actively seeking feedback. Clear conclusions that line up with design and analysis. Quality: good			
2 7	(Oktaria and Soemantri, 2018)	**<u>Undergraduate Medical Students' Perceptions on Feedback-Seeking Behaviour.</u>**		Average	No

Criteria		Score
1	Clear research question/hypothesis	1
2	Appropriate study group	1
3	Reliable/valid data collection methods	0
4	Completeness of data	0
5	Control for confounding factors/ variables	1
6	Appropriate analysis of results	0
7	Conclusion justified by data	1
8	Reproducible by other researchers	0
9	Prospective rather than retrospective	1
10	Ethical issues addressed	1
11	Are results supported by data from more than one source	1
12	Supported by other studies	0
	Total	7

Indonesia. Qualitative, 4 FGs, 34 students – quite big FGs with 7-10 per group. Could they develop themes sufficiently with only 4 FGs? Don't clearly state their methodology or give enough detail on how they maintained rigorous methodology. Partly about students' understanding and experiences of feedback rather than

		FBS alone. Only came up with two promoters for FBSB (get information and image management), unlike other research.		
		Looked at students' self-perceptions and perceptions of teaching staff, but reported on themes that only occurred once in the data. Triangulated students with teachers.		
		Quality: average. But didn't give demographics of students, focussed on feedback rather than in depth exploration of FBSB. Cultural difference between Indonesia and UK.		
28	(Pal *et al.*, 2014)	**Utilising feedback from patients and their families as a learning strategy in a Foundation Degree in palliative and supportive care: a qualitative study.**	Good	No

Criteria		Score
1	Clear research question/hypothesis	1
2	Appropriate study group	1
3	Reliable/valid data collection methods	1
4	Completeness of data	0
5	Control for confounding factors/ variables	0
6	Appropriate analysis of results	1
7	Conclusion justified by data	1
8	Reproducible by other researchers	1
9	Prospective rather than retrospective	1
10	Ethical issues addressed	0
11	Are results supported by data from more than one source	0
12	Supported by other studies	1
	Total	8

Qualitative. UK. Explores healthcare support workers' experiences of FBS from patients using patient experience questionnaires as part of a course they

		enrolled on. 12 support worker students and 2 tutors in 3 FGs over 2 years, but only 6 of these participated in the last FG.				
		Clear detailed description of how data were collected and analysed. Did not clearly state how they triangulated and if saturation was achieved.				
		Inhibiters of FBS included lack of confidence, feeling they didn't have time, not wanting to bother patients with something that did not directly benefit them and patients' language barriers or cognitive impairment and whether feedback would be honest due to power imbalance.				
		Quality: good, but about seeking feedback from patients rather than teaching staff. Shame there was such a high dropout rate. Not much literature on seeking feedback from patients, note significantly more ethical implications as involving patients, so useful addition.				
2 9	(Ramani *et al.*, 2017)	**Uncovering the unknown: A grounded theory study exploring the impact of self-awareness on the culture of feedback in residency education**			Good	No- too late

Criteria		Score
1	Clear research question/hypothesis	1
2	Appropriate study group	1
3	Reliable/valid data collection methods	1
4	Completeness of data	1
5	Control for confounding factors/ variables	1
6	Appropriate analysis of results	1
7	Conclusion justified by data	1
8	Reproducible by other researchers	1
9	Prospective rather than retrospective	1
10	Ethical issues addressed	0

		11	Are results supported by data from more than one source	1		
		12	Supported by other studies	0		
			Total	10		

America. Exploring perspectives of residents on the value of, barriers to, and best practices for feedback and perspectives of residents and clinical teachers on the institutional feedback culture, feedback seeking, receptivity and bidirectional feedback. 67 postgraduate trainees in 9 FGs, and 22 faculty staff in 3 FGs. Qualitative. Grounded theory. Clear outline of methods. Triangulated. Secondary analysis of previously obtained data. Used Johari window to explain how feedback developed self-awareness (known to self and others (open), unknown to self but known to others (blind), known to self and unknown to others (hidden), and unknown to self and others (unknown))

Faculty wondered if modelling FBSB could encourage residents to do the same, suggested training on receiving and accepting feedback. Then practical tips on how feedback can be used to develop self-awareness- FBS can address the "blind spot" (unknown to self). Lots of participants – did it take them long to reach saturation?- probably because they wanted to get multiple papers from this.

Quality: good. Nothing similar in MedEd literature.

30	(Ramani *et al.*, 2018b)	**About Politeness, Face, and Feedback: Exploring Resident and Faculty Perceptions of How Institutional Feedback Culture Influences Feedback Practices**	Good	No – too late

Criteria		Score
1	Clear research question/hypothesis	1
2	Appropriate study group	1

		3	Reliable/valid data collection methods	1		
		4	Completeness of data	1		
		5	Control for confounding factors/ variables	1		
		6	Appropriate analysis of results	1		
		7	Conclusion justified by data	1		
		8	Reproducible by other researchers	1		
		9	Prospective rather than retrospective	1		
		10	Ethical issues addressed	1		
		11	Are results supported by data from more than one source	1		
		12	Supported by other studies	1		
			Total	12		

Qualitative. America. Postgraduate. Exploring feedback culture, and FBS was part of this. 29 trainees and 22 staff. Grounded theory. Clearly outlines recruitment, data collection and analysis.

Barriers to FBS included being mentally unprepared to FBS because they were overwhelmed with clinical commitments, fear of negative feedback, but wished with retrospect that they had proactively sought feedback more as they progressed through training. Senior trainees FBS more than junior ones. Residents and faculty felt the culture of politeness was a barrier to honest, especially constructive feedback. Authors also came up with facilitators for FBS but unclear how they developed these from the data presented. Adds to current knowledge. Quality: good.

3 1	(Rassbach *et al.*, 2019)	**The effect of faculty coaching on resident attitudes, confidence and patient-rated communication: a multi-institutional randomized controlled trial.**		Poor	No
		Criteria	Score		

1	Clear research question/hypothesis	1
2	Appropriate study group	0
3	Reliable/valid data collection methods	0
4	Completeness of data	0
5	Control for confounding factors/ variables	0
6	Appropriate analysis of results	0
7	Conclusion justified by data	0
8	Reproducible by other researchers	1
9	Prospective rather than retrospective	1
10	Ethical issues addressed	0
11	Are results supported by data from more than one source	0
12	Supported by other studies	1
	Total	4

Questionnaire study on postgraduate trainees getting patient feedback. America. Poor uptake – 40-45%. Randomised controlled trial, with intervention receiving coaching with their patient feedback- not the best study design to answer their research question. Quantitative, but their power calculations calculated needing 64 trainees for 80% power (usually RCTs aim for 90% or above) but they only recruited 57.

Conclude that intervention group were more likely to FBS from patients

Quality: poor. Insufficient numbers to draw conclusions. Mostly about receiving feedback and self-confidence with communication rather than FBS. Doesn't account for confounding factors, such as trainees getting informal coaching from their supervisors or friends.

They have a corresponding qualitative paper (Bogetz *et al.*, 2018) but this is more about receiving and dealing with feedback using coaching than on FBS.

3	(Ravik *et al.*, 2017a)	**Defining and comparing learning actions in two simulation modalities: students training on a latex arm and each other's arms.**	Average	No

Criteria		Score
1	Clear research question/hypothesis	1
2	Appropriate study group	1
3	Reliable/valid data collection methods	1
4	Completeness of data	1
5	Control for confounding factors/ variables	0
6	Appropriate analysis of results	1
7	Conclusion justified by data	1
8	Reproducible by other researchers	0
9	Prospective rather than retrospective	1
10	Ethical issues addressed	1
11	Are results supported by data from more than one source	0
12	Supported by other studies	0
	Total	8

Behaviours of 9 nursing students seeking feedback, described as "seeking support", using video observations of nursing students cannulating latex arms and each other's arms. Nursing students were more likely to FBS if practising on each other's arms, compared to dummy arms. No triangulation. Videos are an invasive data collection method- would audio recordings be better? Although this would not collect non-verbal communication.

Quality: Average. Unsure if "seeking support" be defined as FBS as the authors did not define this well in the paper – e.g. could be emotional support for failed attempts instead of feedback. Not much in the literature on

3 3	(Robertson and Fowler, 2017)	seeking feedback from peers or on the impact of patient safety as a motivation to seek feedback so this is a useful paper.		Poor	No

3 3	(Robertson and Fowler, 2017)	**Medical Student Perceptions of Learner-Initiated Feedback Using a Mobile Web Application**	Poor	No

Criteria		Score
1	Clear research question/hypothesis	1
2	Appropriate study group	1
3	Reliable/valid data collection methods	0
4	Completeness of data	0
5	Control for confounding factors/ variables	0
6	Appropriate analysis of results	0
7	Conclusion justified by data	0
8	Reproducible by other researchers	0
9	Prospective rather than retrospective	1
10	Ethical issues addressed	0
11	Are results supported by data from more than one source	0
12	Supported by other studies	1
	Total	4

Students past experiences of getting feedback to help design their app. Year medical students on their 4 week anaesthetics attachment. Qualitative. 4 FGs, total of 18 students.

Students preferred feedback from faculty (senior) rather than residents (trainees) because of residents' stress levels. FBS was influenced by how well they performed a task.

Quality: poor. Did not describe methods or maintaining rigour. Extremely basic analysis which is descriptive rather than developing themes, so unclear how they

3 4	(Teunissen and Bok, 2013)	**Believing is seeing: how people's beliefs influence goals, emotions and behaviour.** Insufficient relevance- not a clear literature review on feedback seeking. Good summary of literature on self-assessment in med ed. Overall easy to understand but very few med ed studies included. No search strategy outlined. Narrative review article on self-theories and their impact on FBSB. Studies on GO are from organisational psychology and general higher education, rather than medical education.	Insufficie nt relevance so not included	No

came up with their conclusions form this. 4 focus groups could potentially have had much richer data than they discussed. Also – if this was grounded theory, they had fixed qns rather than developing themes through FGs.

3 5	(Teunissen *et al.*, 2009a)	**Who wants feedback? An investigation of the variables influencing residents' feedback-seeking behavior in relation to night shifts.**	Good	Yes

Criteria		Score
1	Clear research question/hypothesis	1
2	Appropriate study group	1
3	Reliable/valid data collection methods	1
4	Completeness of data	1
5	Control for confounding factors/ variables	0
6	Appropriate analysis of results	1
7	Conclusion justified by data	1
8	Reproducible by other researchers	1
9	Prospective rather than retrospective	1
10	Ethical issues addressed	0
11	Are results supported by data from more than one source	1

12	Supported by other studies	1
	Total	10

Multicentre. Quantitative, using 5-9 questions rated on a Likert scale. Postal questionnaires. Dutch O&G residents. 76.5% response rate (166 residents) across 40 hospitals. 85.5% of responders were female, which is unavoidable in a female dominated specialty, but they do not give statistics on the national male: female ratio. Provide good justification for the study design, in that they explored behaviours on night shift because this is when trainees are likely to receive less observation and so must proactively seek feedback on their performance to improve learning during night shifts. Low Cronbach's alpha for perceived benefits of FBS. Self reported.

While study participants were in their first two years of training, the authors did not state if any of these residents had worked elsewhere prior to this job and for how many years they had practised medicine before participating in the study. Impressive response rate (76.5%) with a total of 166 responses. However, as with all quantitative studies, sufficient number of participants are needed for results to be meaningful. This could be why the authors did not detect a statistically significant difference, for example, with gender. If we make the assumption that FBS does indeed develop as students mature, this could impact on conclusions.

Concluded that trainees were more likely to FBS if they perceived a benefit, and were more likely to use "monitoring" to FBS is they perceived a high cost of FBS. Relationship between learning GO and increased perceived benefits of FBS and reduced costs, while performance GO increases perceived cost of FBS.

		Quality: good design, great response rate for a quantitative study but poor alpha so would question reliability.			Poor	No
3 6	(Warman *et al.*, 2014)	**Initiatives to improve feedback culture in the final year of a veterinary program.**			Poor	No

For study 36:

Initiatives to improve feedback culture in the final year of a veterinary program.

Criteria		Score
1	Clear research question/hypothesis	1
2	Appropriate study group	1
3	Reliable/valid data collection methods	0
4	Completeness of data	0
5	Control for confounding factors/ variables	0
6	Appropriate analysis of results	0
7	Conclusion justified by data	0
8	Reproducible by other researchers	0
9	Prospective rather than retrospective	1
10	Ethical issues addressed	0
11	Are results supported by data from more than one source	1
12	Supported by other studies	1
	Total	5

Vet medicine. UK. Impact of an intervention.

Describes ways the authors tried to improve student satisfaction with feedback with various initiatives, including a one page document to students and staff on how to FBS. One quantitative questionnaire to students and staff (unclear how this was validated) evaluating interventions but didn't explore FBSB, followed by one student FG (7 students) and one staff FG (4 staff). Students were asked about the role of FBS, and described feeling intimidated or embarrassed at FBS. Unclear how

		they reached data saturation with only one FG in each group. This study mostly focusses on evaluating educational interventions. No detailed explanation methodology, qualitative or quantitative analysis or maintaining methodological rigour.		

5. Data collection timeline

Year	Month		Aim 1	Aim 2	FP development	Notes
2014	Feb	Literature scoping and review	✓	✓	✓	
	Mar	Literature scoping and review	✓	✓	✓	
	Apr	Literature scoping and review	✓	✓	✓	
		Designing prepilot FPs			✓	This informed the development of the FPs.
	May	Ethics application for prepilot study			✓	
		Prepilot study			✓	This informed the development of the FPs.
	Jun	Prepilot interviews and analysis			✓	Interviews informed development of the FPs by scoping out usability but were not used in the qualitative analysis for aims 1 and 2
	Jul	Module meetings and year meetings to discuss implementation Testing software			✓	Used to guide development of FPs and improve engagement. Not used for qualitative analysis for aims 1 and 2
	Aug	Literature scoping and review	✓	✓	✓	
		Formulation of research proposal	✓	✓	✓	
		Pilot roll-out year 5			✓	Focussed on development of FPs
		Questionnaire 1 (students)		✓	✓	Predominantly evaluated FPs but some qualitative data obtained for aim 2 (Q2 from questionnaire 1 and Q2, 8 and 8 from questionnaire 2)

Year	Month	Activity				Comments
		Questionnaire 2 (staff)		✓	✓	Predominantly evaluated FPs but some qualitative data obtained for aim 2
	Sept	Running pilot roll out for year 5			✓	Focussed on development of FPs
	Oct	Pilot roll-out year 3			✓	Focussed on development of FPs informed by results of questionnaires 1 & 2
		Analysing data from questionnaires 1 & 2		✓	✓	Predominantly evaluated FPs but some qualitative data obtained for aim 2 (Q2 from questionnaire 1 and Q2, 8 and 8 from questionnaire 2)
	Nov	Formulation of research proposal	✓	✓		
	Dec	Ethics application	✓	✓		
2015	Jan	Questionnaire 3 (students)	✓			Used for figure 4 in chapter 3 Qualitative answers informed aim 1
	Feb	Project FPs stopped			✓	
	Mar	Interviews with - James - Becky & Rachel - Annabel, Sue & Steve - Jim Transcription and analysis of these interviews after each session	✓	✓		Informed aims 1 and 2
	Apr	Interviews with - Sally & Darcy - Eilidh - Linda - Dr A_Hospital Transcription and analysis of these interviews after each session	✓	✓		Informed aims 1 and 2

		Developing videos on using the FPs with different feedback models			✓	Used for training material for FPs. Not used in this thesis
	May	Questionnaire 4 (staff)		✓	✓	Informed aim 2 Used to further develop FPs
		Interviews with - Dr B_Hospital & Dr C_Hospital - Dr D_Hospital - Dr E_Hospital Transcription and analysis of these interviews after each session	✓	✓		Informed aims 1 and 2
		Year meetings, module meetings, peripheral site visits and hospital grand rounds			✓	
	Jun	Year meetings, module meetings, peripheral site visits and hospital grand rounds Trialling new software Writing a standard operating procedure			✓	
		Analysing data from questionnaire 4		✓	✓	Informed aim 2 Used to further develop FPs
		Ongoing analysis of interviews from previous month	✓	✓		
	Jul	Year meetings, module meetings, peripheral site visits and hospital grand rounds Trialling new software			✓	

		Writing a standard operating procedure				
	Aug	Full roll-out for years 3, 4 and 5			✓	
	Sep	Interviews with • Dr F_GP • Dr G_GP • Dr H_GP • J_Nurse Transcription and analysis of these interviews after each session	✓	✓		Informed aims 1 and 2
		Module meetings and hospital visits to discuss FP development			✓	
	Oct	Questionnaire 5 (students)		✓	✓	Informed aim 2 Also used to evaluate FPs
		Interviews with • Dr K_GP • Lisa & Sandra • L_Nurse Transcription and analysis of these interviews after each session	✓	✓		
	Nov	Ongoing analysis of interviews from previous month	✓	✓		Informed aims 1 and 2
	Dec	Analysis of data from questionnaire 5		✓	✓	Informed aim 2 Also used to evaluate FPs
2016	Jan	Ongoing data analysis				
	Feb	Ongoing data analysis				

6. Questionnaires

Questionnaire 1: Student Questionnaire Autumn 2014

Questionnaire overview	
Distribution	Two fifths of year 5 students (FPs only implemented in these rotations. Other years were on holiday)
When	August / September 2014
Response rate	72 students (66%)

1. How useful have you found the Feedback Postcards so far?

    Not useful at all   Not useful   Neutral   Quite useful   Very useful

	%
Very useful	10.3%
Useful	17%
Neutral	36.7%
Not useful	18%
Not useful at all	18%

2. What have you found useful about them? (free text)

3. What would you like to change? Why? (free text)

4. One of our aims is to allow you to identify whether or not you're ready for finals in the competence being observed, since this is the major hurdle that lies ahead. The pass/fail question is designed to be as clear and non-judgmental as possible. As you get closer to the time, we hope it will make it clear whether or not you need more support to pass.

    Although it is reasonable to obtain a "fail" at the start of the year, we realise you need to know if you are on track to pass finals, given your current stage of training.

    We are therefore considering adding an additional question: "Based on this, is the student 'on track' to pass Finals?"

    Would you find this useful?

    Not useful at all   Not useful   Neutral   Quite useful   Very useful

Response	%

Very useful	24.3%
Useful	40.5%
Neutral	21.6%
Not useful	2.7%
Not useful at all	10.8%

5. Do you find the pass/fail question useful?

Not useful at all   Not useful   Neutral   Quite useful   Very useful

Response	%
Very useful	16.7%
Useful	23.3%
Neutral	26.7%
Not useful	10%
Not useful at all	23.3%

6. We are considering an alternative to the pass/fail question: "If this was the final year exam, would the student pass:

- Red (no)
- Amber (borderline)
- Green (yes)

Would you find the alternative question useful?

Not useful at all   Not useful   Neutral   Quite useful   Very useful

Response	%
Very useful	20%
Useful	37%
Neutral	15%
Not useful	8%
Not useful at all	20%

7. Would you like to suggest another way to rephrase the pass/fail question? (free text)

8. We have specified that the cards must only be completed by doctors at ST1 level or above, senior nurses, nurse practitioners and other health professionals. Please tell us if you agree with the following statement: I have been able to get enough postcards completed by these staff.

Strongly disagree   disagree   neutral   agree   strongly agree

	%
Strongly agree	10%
Agree	22%
Neutral	14%
Disagree	18%
Strongly disagree	36%

9. If not, how do you think this could be resolved? (free text)

10. Is there anything else you would like to tell us about the Feedback Cards Project? (free text)

Questionnaire 2: Staff questionnaire Autumn 2014

Questionnaire overview	
Distribution	GPs and hospital clinicians
When	August / September 2014 (2 months into the pre-pilot cycle)
Response rate	8 out of a potential > 50 responses
Key points	75% of responders rated the FPs as useful or very useful and one responder was neutral. Free text comments referred to the FPs being "quick", "easy", "concise", and ensures the student is given feedback. Due to the significantly low response rate, solid conclusions could not be formed.

1. How useful do you think the Feedback Postcards are?

Not useful at all Not useful Neutral Quite useful Very useful

	%
Very useful	25%
Useful	50%
Neutral	12.5%
Not useful	12.5%
Not useful at all	0%

2. What do you think is useful about them? (free text)
3. What would you like to change? Why? (free text)
4. We are considering adding an additional question: "*Based on this, is the student 'on track' to pass Finals?*" Do you think this is useful?

Not useful at all Not useful Neutral Quite useful Very useful

Response	%
Very useful	12.5%
Useful	50%
Neutral	25%
Not useful	12.5%
Not useful at all	0

5. Do you think the pass/fail question is useful?

Not useful at all   Not useful   Neutral   Quite useful   Very useful

Response	%
Very useful	0
Useful	50%
Neutral	37.5
Not useful	12.5
Not useful at all	0

6. Do you think this alternative question is more useful?

Not useful at all   Not useful   Neutral   Quite useful   Very useful

Response	%
Very useful	0%
Useful	50%
Neutral	37.3%
Not useful	12.5%
Not useful at all	0%

7. Would you like to suggest another way to rephrase the pass/fail question? (free text)

8. We have specified that the cards must only be completed by doctors at ST1 level or above, senior nurses, nurse practitioners and other health professionals.

    Do you think students have found it easy to get enough postcards completed by these staff?

Response	%
Strongly agree	0%
Agree	50%
Neutral	25%
Disagree	12.5%
Strongly disagree	0%
Unsure	12.5%

9. Is there anything else you would like to tell us about the Feedback Postcards Project? (free text)

Questionnaire 3: Student Questionnaire January 2015

Questionnaire overview	
Distribution	Years 1, 3 and 5 students as part of a longer questionnaire
When	January 2015
Response rate	207 students (29%)

1. I proactively seek feedback rather than waiting to receive it.

   Never   Occasionally   Sometimes   Most of the time   Always

Response	Year 1	Year 3	Year 5	Total
Always	7%	5%	17%	9%
Most of the time	10%	10%	29%	16%
Sometimes	17%	38%	28%	28%
Occasionally	32%	27%	19%	26%
Never	34%	20%	7%	21%

2. How often do you proactively seek personal feedback (as opposed to waiting to receive standardised feedback) and why? (free text)

Questionnaire overview	
Distribution	GPs and hospital clinicians
When	Summer 2015
Response rate	22 hospital clinicians (out of a possible several hundred) 16 GPs (out of 30 GP practices with several GPs in each practice).
Key points	Very low response rates so unable to form solid conclusions. Highlighted some recurring themes to raise in interviews. Importance of interviews for this population group.

5. How useful do you think the Feedback Postcards are?

Not useful at all   Not useful   Neutral   Quite useful   Very useful

Response	GPs %	Hospital clinicians %
Very useful	12.5	36
Useful	12.5	37
Neutral	19	9
Not useful	31	9
Not useful at all	25	9

6. Please tell us up to 3 things you find useful about them (free text)
7. What would you like us to change and why? (Please be as critical as possible!) (free text)
8. Have you been approached by students to complete a card or have you asked them for a card to complete?

I have approached them   I have been approached   Both   Neither

Response	GPs %	Hospital clinicians %
I have approached them	0	0
I have been approached	62.5	32
Both	37.5	55
Neither	0	13

9. Could you tell us about any instances when you would have liked to complete a card but you did not do so? (please leave blank if not applicable) (free text)
10. Have there been any instances when a student asked you to complete a card but you did not do so? If so, could you tell us what happened? (please leave blank if not applicable) (free text)
11. During this year we changed the wording on the cards, to allow the student to get an idea of where they are at this stage:

 Red- demonstrated level below that expected for this stage

 Amber – demonstrated expected level for this stage, not yet at FY1 level

 Green – demonstrated level expected at start of FY1

What do you think of this wording?

Not useful at all   Not useful   Neutral   Quite useful   Very useful

Response	GPs %	Hospital clinicians %
Very useful	25	37
Useful	31	36
Neutral	19	9
Not useful	25	9
Not useful at all	0	9

12. Is there anything else you would like to comment on? (free text)

Questionnaire 5: Winter 2015 questionnaire

Questionnaire overview	
Distribution	Years 3, 4 and 5 students using the VLE
When	Autumn/winter 2015
Response rate	85% (378 students)

This year we have changed the feedback postcards based on the feedback students gave us last year.

It would be helpful to get your views on how you have found them this year and how we can make them more helpful for you.

Personal information will not be published or disclosed. Free text responses may be quoted after deidentification. We will link the results to student usernames through EEMeC so as to see if student feedback needs vary based on academic performance, along with information provided in other questionnaires. All findings will be used to improve feedback quality in the school and may be disseminated to help improve our understanding of feedback needs.

1. This academic year, have you asked a member of staff to complete a feedback postcard?
   Y   N

2. If yes, did you manage to get one filled in? Y   N
   - If no, could you tell us about what happened? (free text)
3. Were there times when you would have liked to have asked for feedback but didn't?
   Never   sometimes   half the time   most of the time   nearly all the time

Response	%
Nearly all the time	5.4
Most of the time	27.9
Half the time	22.3
Sometimes	34.6
Never	9.8

If so, which module? (free text)

Which site? WGH   RIE   GP   BGH   SJH   VHK   other ………

4. Were there times when you asked for feedback but didn't get any?

| Never | sometimes | half the time | most of the time | nearly all the time |

Response	%
Nearly all the time	11.6
Most of the time	12.5
Half the time	38.3
Sometimes	31.4
Never	6.2

If so, which module? (free text)

Which site?   WGH   RIE   GP   BGH   SJH   VHK   other ………

5. Which of the following statements do you most closely agree with? (tick one)
   - There should be a minimum number of cards required per module and I need to get a pass on each card to pass the module.
   - There should be a minimum number of cards required per module but the content of the cards do not count towards you passing the module (this is what we currently do).
   - The cards should be entirely optional and do not contribute towards the module mark.

Statement	Response
There should be a minimum number of cards required per module and I need to get a pass on each card to pass the module.	16.7%
There should be a minimum number of cards required per module but the content of the cards do not count towards you passing the module (this is what we currently do)	15.2%
The cards should be entirely optional and do not contribute towards the module mark	68.1%

Please rate the following:

6   I try to complete as many cards as possible during an attachment

| Never | sometimes | half the time | most of the time | nearly all the time |

Response	%

Nearly all the time	10.5
Most of the time	26.7
Often	37.1
Never	25.7

1. I try to seek feedback on tasks I know I can do well

   Never   sometimes   half the time   most of the time   nearly all the time

Response	%
Nearly all the time	8.3
Most of the time	14.2
Half the time	46.2
Sometimes	27.4
Never	3.9

2. I seek feedback on challenging tasks

   Never   sometimes   half the time   most of the time   nearly all the time

Response	%
Nearly all the time	6.9
Most of the time	15.3
Half the time	34.9
Sometimes	35
Never	7.9

3. Students who get a "red" feedback card (i.e. demonstrated level below that expected for stage) should keep completing cards until they have the required number of "amber" or "green" cards to pass the module
   Strongly disagree   disagree   neutral   agree   strongly agree

Response	%
Strongly agree	5
Agree	24.9

Neutral	18.4
Disagree	27.8
Strongly disagree	24.1

4. A list of compulsory tasks to complete feedback cards on for each module is useful

Strongly disagree   disagree   neutral   agree   strongly agree

Response	%
Strongly agree	7.8
Agree	31.5
Neutral	13.8
Disagree	27.5
Strongly disagree	19.4

5. Feedback that acknowledges my strengths is useful

Strongly disagree   disagree   neutral   agree   strongly agree

Response	%
Strongly agree	28.6
Agree	36.2
Neutral	18.2
Disagree	10.5
Strongly disagree	6.5

6. Feedback that tells me how to improve is useful

Strongly disagree   disagree   neutral   agree   strongly agree

Response	%
Strongly agree	33.1

Agree	35.3
Neutral	14.6
Disagree	13.2
Strongly disagree	3.8

7. Having a judgement on my demonstrated level of performance is helpful (this is the red/amber/green section)

Strongly disagree disagree   neutral   agree   strongly agree

Response	%
Strongly agree	16.7
Agree	23.3
Neutral	26.7
Disagree	10
Strongly disagree	23.3

8. I am willing to find out if I am not yet at the level expected
Strongly disagree disagree   neutral   agree   strongly agree

Response	%
Strongly agree	12.3
Agree	39.2
Neutral	20
Disagree	23.7
Strongly disagree	4.8

9. I have found the postcards useful so far during this academic year

Strongly disagree disagree   neutral   agree   strongly agree

Response	%

Strongly agree	29.1
Agree	22.1
Neutral	14.7
Disagree	29.2
Strongly disagree	4.9

10. What have you found useful about them? (free text)
11. How could we develop the feedback postcards to improve feedback to you? (free text)
12. Reviewing the cards with my tutor at the end of the attachment is useful

Strongly disagree   disagree   neutral   agree   strongly agree

Response	%
Strongly agree	5.1
Agree	29.3
Neutral	23.2
Disagree	26.1
Strongly disagree	16.3

13. Is there anything else you would like to comment on? (free text)

7. Invitation to Participate

The following notice asking for student volunteers to participate was placed on the students' VLE noticeboard.

Feedback Postcards Project: invitation to participate

This year, we have implemented the Feedback Postcards in years 3 and 5 as a way for you to seek and record feedback during clinical attachments and monitor your progression. There is more information on the webpage: https://www.eemec.med.ed.ac.uk/pages/feedback-cards

I am inviting you to take part in a focus group and/or interview to evaluate the Feedback Postcards, what you think is helpful about them and how we can improve them. We also would like to explore how students seek feedback during attachments and what type feedback you feel is helpful or unhelpful. The focus groups/interviews will last up to an hour. We do not expect you to miss any scheduled activities to attend and you will remain anonymous. Participation is entirely voluntary.

If you would like to participate, please email   indicating if you would prefer and interview of focus group.

8. Interview Consent Form

THE UNIVERSITY OF EDINBURGH

CENTRE FOR MEDICAL EDUCATION

INTERVIEW & FOCUS GROUP CONSENT FORM

Project Title: The Feedback Postcards Project

Researcher: Dr Michelle Arora

Participant name: _____

Contact details: Telephone: _____

                                    Email : _____

1.   I agree to participate in an interview / focus group undertaken by The University of Edinburgh Centre for Medical Education and their research collaborators.

2.   I have been given a full explanation of the nature, purpose and likely duration of the interview / focus group, and have been given the opportunity to ask questions about these.

3.   I have been assured that my participation is entirely voluntary and I understand that I am free to withdraw my participation at any time without needing to justify my decision. I can also ask afterwards for specific comments not to be used in the research.

4.   I do not in any way feel pressured into participating in this research, and will try to respond openly and honestly to questions.

5.   I understand that notes will be taken and the interview / focus group will be audio-recorded and transcribed. These will be treated in strictest confidence and will only be accessible to the research team. They will be destroyed when no-longer required for the research.

6.   I understand that anonymous data from this interview / focus group may be published as research findings, including anonymised quotes, in journal articles, book chapters, on the world wide web or in a thesis / dissertation. I am aware that I can see any such material before publication upon request.

7.   I understand that the main researcher (Michelle Arora) will not be examining in the year 3 or year 5 examinations.

Signed   by   the   Participant:

_____

Date:

_____

Please keep one copy for your records and hand the other to the researcher (Michelle Arora)

Thank you

Dr Michelle Arora
Fellow in Medical Education / ST7 Paediatrics
Centre for Medical Education

The Feedback Postcards Project

Information Sheet

Thank you for considering taking part in this project.

Why are we doing this study?

We are aware that providing effective feedback is an important part of enhancing teaching and learning by enabling students to understand what aspects they need to improve on and how. We know that many students feel they do not receive adequate feedback from our previous work from the Edinburgh Feedback Project and previous National Student Surveys.

What is this study about?

This academic year, we have implemented a feedback system, the Feedback Postcards, into years 3 and 5 as a way to enable you to proactively seek and record feedback you receive and monitor your progression throughout the year. You have all had the opportunity to use the Feedback Postcards during your clinical attachments. We wish to evaluate the Feedback Postcards, explore how students seek feedback in more detail and identify any specific training needs for our tutors.

This study aims to:

- Improve the level and quality of feedback that undergraduate students currently receive during their clinical attachment.

- Examine what factors enable and prevent students from seeking feedback.

- Evaluate how we can improve staff engagement and confidence at giving feedback.

- Evaluate how we can improve students' confidence at seeking feedback.

How will this study be done?

If you choose to participate, we will ask you to take part in either a focus group and/or an interview to explore your views on how we can improve the Feedback Postcards, if they have had any impact on your learning and how you find seeking feedback. We will need to record the interview or focus group for better recall but we will ensure you remain anonymous.

If you wish, you can also choose to take part in another focus group where you will be asked to look at samples of anonymised feedback written on feedback postcards, to help us explore what feedback you feel is helpful or unhelpful. We will use this to evaluate the feedback given on Feedback Postcards and to help improve staff training on how to give feedback.

The interview or focus group will last up an hour, but can go on to 90 minutes if you wish. We do not expect you to miss any teaching activities for this and we will arrange to meet at a time that suits you.

We will publish an anonymised version of the results of this study on Eemec. We can also email you a copy of the results on request.

For ethical reasons, we are unable to offer payment for participants.

Will taking part affect me in any way?

Your decision to volunteer for this study or to withdraw at any stage will not impact on your academic performance in any way.

We will not disclose the contents of your interview / focus group to your supervisors without your prior permission. However, in the unlikely event of a serious professionalism or patient safety concern being raised about a student, trainee or tutor, we will explicitly inform you that we are obliged to break confidentiality to act upon the information given.

In extremely rare circumstances, some students may wish to discuss their feedback cards with someone not involved in this project. You can access support from your Personal Tutor, your Clinical Tutor Associate, Debra Black (MBChB Student Experience Officer (SEO)), Dr Krisstmunsdottir (Dean of Pastoral Care) or the Student Counselling Service. Contact details can be found on Eemec.

Personal tutors and CTAs are aware of this project but will not know of your participation in it. If you would like to discuss the issues raised with your personal tutor, you could give them a copy of your transcript for the two of you to discuss.

How do I found out more?

If you have any further questions about this project, please contact me by email   . If you wish to speak someone who is not involved in this project for independent advice, please contact Dr Janet Skinner (Consultant in Emergency Medicine/ Director of Clinical Skills) by email on
Thank you.

If you are happy to take part, please sign both copies of the attached consent form and keep one for your records.

10.   Summary of interview participants

Date	Pseudonym	Student or staff	Grade	No of participants
230315	James	Student	Y5	1
230315	Becky, Rachel	Student	Y5	2
270315	Annabel, Sue, Steve	Student	Y5	3
300315	Jim	Student	Y5	1
080415	Sally, Darcy	Student	Y5	2
210415	Eilidh	Student	Y3	1
220415	Linda	Student	Y5	1
280415	Dr A_Hospital	Staff	Consultant	1
120515	Dr B_Hospital Dr C_Hospital	Staff	Consultants + junior doctor	2
150515	Dr D_Hospital	Staff	Consultant	1
180515	Dr E_Hospital	Staff	Consultant	1
140915	Dr F_GP	Staff	GP	1
150915	Dr G_GP	Staff	GP	1
230915	Dr H_GP	Staff	GP	1
240915	J_Nurse	Staff	Nurse	1
021015	Dr K_GP	Staff	GP	1
081015	Lisa, Sandra	Student	Y4	2
121015	L_Nurse	Staff	Nurse	1

11.   Characteristics of interview participants

Pseudonym	Summary of participant (s)
James	James is a male 5th year medical students from the UK. He has not needed to resit any exams.
Becky Rachel	Becky and Rachel are two female 5th year students from the UK. They have not needed to resit any exams.
Annabel, Sue, Steve	Steve is a male postgraduate student and had completed a non-science related degree prior to studying medicine. He did not pass Finals the first time and had to repeat final year. Annabel and Sue are female international students. English is not their first language.
Jim	Jim is a male year 5 student who describes himself as "quiet" and shy.
Sally, Darcy	Sally and Darcy are female year 5 students. Sally is studying medicine as a postgraduate student, having completed a degree and worked for a brief period before entering medical school. Darcy is from elsewhere in Europe and English is not her first language. She reports she has struggled passing some of her exams in previous years.
Eilidh	Eilidh is a year 3 female student from the UK. She has not had to resit any exams.
Linda	Linda is a year 5 female student from Europe. She is bilingual.
Dr A_Hospital	Dr A_Hospital is a male hospital consultant
Dr B_Hospital Dr C_Hospital	Dr B_Hospital is a male hospital consultant and Dr C_Hospital is a female junior hospital doctor. They mostly teach year 3 students.
Dr D_Hospital	Dr D_Hospital is a male hospital consultant
Dr E_Hospital	Dr E_Hospital is male GP
Dr F_GP	Dr F_GP is a female GP
Dr G_GP	Dr G_GP is a male GP
Dr H_GP	Dr H_GP is a female GP
J_Nurse	J_Nurse is a male nurse who is interested in simulation teaching.
Dr K_GP	Dr K_GP is a female GP
Lisa Sandra	Lisa is a year 4 student from the UK. Sandra is a year 4 student studying medicine as a postgraduate and is from elsewhere in Europe.
L_Nurse	L_Nurse is a female nurse who is interested in teaching clinical skills

12.   Semi-structured interview questions

These are the initial questions used when conducting interviews. As this was grounded theory, I developed further questions before each interview as I analysed my data and generated new themes, so I could explore patterns and relationships between themes better.

- Introduce each other, decide pseudonym
- Icebreaker: What do you think is good feedback? Can you tell me about a good feedback experience? Why was it good?

1. Have you had any experiences of asking for your own feedback?
   - How did that go?

2. What do you think about going and asking for your own feedback?
   - What are your experiences of asking your tutor for feedback at the beginning of a teaching session?
   - Do you like the idea? Why/why not?
   - Do you think staff expect you to proactively ask them for feedback? What experiences have you had from asking?
   - How do you think other students colleagues have found it?
   - What encourages you or your colleagues to ask / How do you think you could be encouraged to ask?

3. What do you think would influence people's decisions to go and seek feedback?
   - What characteristics may make a student more likely to ask tutors for feedback?
   - What do you think deters you or other students from asking for feedback? How could this be changed?

4. Do you think asking for feedback has changed how you have learnt ? (may want to talk about what they have learnt)
   - Helped you to approach doctors/nurses?
   - Helped you get an idea of what to learn?
   - Has it improved your learning? How?
   - Have you enjoyed this module more?
   - Do you feel happier to go and try things on your own?

5. How do you think this experience will make you a better doctor / more comfortable working on the wards?

6. What do you think of the feedback postcards?
   - How have you found getting them filled in?

- Difficulties getting them completed?
- Have staff been ok with them? Have there been occasions where you didn't want to get a card filled in? Or where you wanted to get feedback but didn't get a card filled in?

7. What do you do with your card after it has been filled in*?*
    - Do you read them again?

8. If you were designing your own way of getting feedback from tutors, how would you do it? Would you change the way feedback postcards are run?

13.　　　Web page for Feedback Postcards

This page was used in place of a student information sheet.

HOW DOES IT WORK?

You will have a stack of postcards, each with your photo and a barcode on it.

You plan ahead and let your tutor know in advance that you would like feedback, especially if there is an aspect you are particularly trying to improve on, so your tutor can focus on this more.

Hopefully your tutor will expect you to proactively ask for feedback from them and fill in a Feedback Postcard. However, we are still in the pilot phase so please let us know if there are any problems with this.

You do something - for instance, examine someone, present a case on a ward round or meeting, interact during a tutorial, prescribe on a kardex- it could be anything.

You give a card to the tutor, who completes it. Please try and fill your cards in sequentially. You can ask a consultant, a junior doctor (ST1 level or above), a nurse or any other health professional. It isn't essential that it is completed in front of you, but hopefully important comments will be made in person as well as in writing. The writing may be an opportunity to be a bit more reflective and detailed.

Alternatively, you could complete the card yourself and ask your tutor to countersign it so they are happy with what is written.

Your tutor will also complete the two questions at the bottom. One question asks how you would perform if this task was part of the Finals exam. It is designed to allow you (and us) to get an idea of whether you will need more support over the next few months before Finals. It should hopefully help guide your tutor to give you helpful advice on what you need to do to get to that stage.

You then ask your tutor to give the medical school some feedback on what they think of this method of delivering feedback on the second postcard (optional). This works best if they are filled in as soon as possible after the event. This is recorded on Card B.

You keep your cards with you throughout your placement. Please remember to take them with you when you meet with your tutor at the end of the attachment. Your tutor will check you have a

sufficient number of cards completed and may want to discuss them with you in more detail.

You return the cards, along with your end-of-attachment assessment form, on completion of your attachment. In most cases, these will be to Jennifer Hill. Some attachments may request you to hand them in locally. Essentially, hand in your cards at the same place that you hand in your end-of-attachment assessment form and they will be directed to us.

Your cards will be scanned and images automatically uploaded so we can email them to you electronically. This way you can build a record of written feedback.

WHAT IS THE POINT OF THESE CARDS?

1. Obtaining feedback - most students who have already used these cards have felt they are helpful in asking for feedback they wouldn't otherwise receive.
2. Memory aid - Some students have felt they already receive plenty of feedback. These cards are ideal to use to record and remember the feedback you receive so you can look at it again later.
3. Monitoring progression- they should be helpful for you to see how you are progressing throughout the module
4. Establishing what you need to do before finals
5. Flagging students who need more support before finals
6. Make meetings with your PT or CTA more helpful, especially if you wish to send the cards to them before your meeting so they can plan ahead if they wish.

WHAT HAPPENS IF I LOSE MY CARDS?

The cards are numbered sequentially. It is important that you keep your cards in a safe place. You must account for any missing cards at the end of the attachment. Please email michelle.arora@ed.ac.uk as soon as possible and we will try to organise replacements.

MY FEEDBACK HASN'T BEEN VERY GOOD

We would expect you to have more constructive feedback at the start of the year. The idea is to see how can improve throughout the year to give you the best chance of passing your exams and make you the best doctor you can be.

In fact, in our trial, students found constructive feedback to be more useful than positive feedback at showing them how they can do better. This is why we have a larger space for comments on "how to

improve" than for "strengths".

These feedback cards are formative and so the content will not affect your marks (so long as you have completed enough of them to fulfil the module requirements).

If you would like to discuss your feedback with someone other than your clinical attachment tutor, you could speak to your Personal Tutor. You can also access support from your Clinical Tutor Associate, Personal Tutor, Debra Black (MBChB Student Experience Officer (SEO)) or the Student Counselling Service. Contact details can be found on Eemec.

Using Feedback Postcards in the Student Assistantship

For Satisfactory Completion

- ***Students will be deemed to have completed the Assistantship on the basis of satisfactory attendance and a satisfactory supervisor's report***.
- You will be required to complete at least five **feedback postcards** during the 2016 Student Assistantship.
- You will also need to have a **professionalism** assessment completed by your supervisor.

Feedback Postcards in the Student Assistantship

In accordance with GMC recommendations to improve assessment of the Student Assistantship, feedback postcards are now used in place of the former multisource feedback exercise that students in previous years had to complete. The feedback postcards are a way of proactively seeking feedback on specific aspects of performance that you would like to improve; recording and remembering feedback you have received and reflecting on it later. Some students have said that they feel they have been given feedback they would not otherwise have received.

The postcards are used to formatively assess how a student performs during the assistantship in the following areas:

Prioritisation

Time management

Communication

Teamwork

Handover

Patient safety

You are required to complete at least five cards during the assistantship in order to pass. The actual feedback you receive on cards will however be purely formative.

Please try to cover at many of the five categories as possible during your placement. You can cover more than one category on one card. You can get them filled in on a wide variety of tasks you do during the assistantship (such as participating in the ward round, admitting a patient, assessing a patient, handing over etc.). Remember to ask someone to complete a card BEFORE you perform the task so they can think about what feedback they would like to give you.

You will receive your pack of feedback postcards from the Year Coordinator on the first day of the assistantship. You will also be given a self-appraisal card (which you need to complete) and a professionalism form (which your tutor needs to complete).

Please remember to bring your five completed feedback postcards and your self-appraisal card when you meet with your tutor. Your tutor will document the number of cards completed on your professionalism form and may want to discuss them in detail with you. You should then hand in your professionalism form AND your feedback postcards to the Year Coordinator at the end of the assistantship.

DO NOT HAND IN YOUR SELF-APPRAISAL CARD. Keep this for discussion with your Clinical Tutor Associate (CTA). If you want, you can also send a copy to your Personal Tutor to discuss at your next meeting. If you will not be meeting with your CTA soon (for example if you are going on your elective), you can email them a photograph or a photocopy of the self-appraisal card and arrange to meet up as soon as you can.

If you have lost your feedback postcards or you would like to do extra ones, there is a template you can download [link].

Contact for feedback postcard queries:

14.   Information leaflet for Prepilot Project

Thank you for volunteering to take part in our project. Our aim is to improve the level and quality of feedback undergraduate students currently receive during their clinical attachments. We are aware that providing feedback is an important part of enhancing teaching and learning, improving motivation, effort and performance by enabling our students to understand what aspects they need to improve on and how. This project is intended to record feedback received so a student can reflect on it at a later date.

These cards can be filled in to provide feedback on any aspect of a student's performance during a bedside teaching session, outpatient clinic, a tutorial, presenting a patient, engaging during a ward round or any other educational activity during the attachment. Students are expected to complete 6 feedback cards over a period of 4 weeks.

Feedback should be precise and specific. Please include how the student performed well and what the student needs to improve on in the future. It may also be helpful to offer constructive advice on how to improve. They are best completed as soon as possible after the event. Please then return the card to the student who will post it back to us.

Students- you may find this more beneficial if you let the assessor know in advance that you would like feedback on your performance. You may also find it helpful to mention if there is an aspect you are particularly trying to improve on so you know how well you are progressing.

If you have any further questions, please feel free to contact me   . Please also see the webpage [insert link to information, which is in previous appendix]

15. Standard Operating Procedure for making up and distributing Feedback Postcards

Authors: Dr Michelle Arora, Dr David Hope, Ms Avril Dewar, Prof Helen Cameron

[Document subtitle]

[Document title]

Email:

October 2015

Feedback Postcards SOP

This is a standard operating procedure for managing the Feedback Postcards Project.

Overview of the process

The FPs aim to enable students to proactively seek and record feedback, which is loaded online onto their Feedback Gallery.

We give students a pack containing a set number of FPs for each module. The student selects a task they would like feedback on and a feedback giver. The student or the feedback giver summarises the feedback conversation on a FP and the feedback giver signs it. At the end of the rotation, the student shows their FPs to their module tutor, who discusses any feedback and marks the number completed on the end-of-attachment form. The student is responsible for getting the FPs filled in and handing the back to us at the end of the module.

We upload the FPs online onto the student's Feedback Gallery, so the student and their Personal Tutor can view them at any point.

```
Generate FPs
```
- Student list
- Mailmerge
- Printing

```
Make up
Packs
```
- FPs
- Envelopes
- Stickers

```
Distribute
packs
```
- Process depeds on year, module and site
- Distribution of uncollected packs

```
Student obtains
feedback
```
- Identifies feedback giver and task
- Completes a FP
- Brings all FPs to end-of-attachment meeting

```
Returns FPs
```
- Uploaded onto Feedback Gallery
- Ensure correct no for some of Y4 modules
- Identify "red" cards before BoE meetings

```
Statistics
```
- No of cards per module, site, profession, grade

```
Staff
requests
```
- Email anonymised copies to tutors
- Email tutors with no completed

The rest of this document will explain these steps in more detail, including suggested ways of managing the project when thing go wrong.

GENERATING FEEDBACK POSTCARDS

This section covers how you establish how many FPs you need, formulating the mail merge document and printing them.

1. Number of Feedback Postcards per module

Before the start of the year, you need to establish how many FPs are needed per module.

Current requirements are in appendix 1 for years 3, 4 and 5 for 2015-6.

Confirm this is the correct number by emailing module organisers or discussions at year meetings. Some modules have other clinical teaching fellows who manage day-to-day running of the module. These changeover each year but are worth making a note of. It is usually faster and more efficient to cc them into any correspondence about numbers of cards, check if there are any problems etc.

Current teaching fellows until August 2016 are:

Module	Name	Email Address
Locomotor (year 3)		
Cardiovascular (year 3)		
Respiratory (year 3)		
Gastrointestinal		
General Surgery (year 5)		

Make sure this has been communicated to the year coordinators and the individual administrators for each module (if available – not all modules have this).

Send an up to date list to Neil McCormick to put on Eemec.

Undergraduate Administrators

Year	Module	Name	Email Address
3	Respiratory		
4	O+G		
4	Psychiatry		
4 and 5	GP		
5	MoE	Sharon Moncrieff	
5	Child Life and Health	Elaine Forbes	

2. Finalise the latest FP design

The FP design is likely to change at the start of the academic year. Make sure you have the latest FP design available. Currently you can get this from Michelle Arora / Dave Hope.

Send blank copies (pdf format) of the latest designs for years 3, 4 and 5 to the year coordinators to put on Eemec. Some students lose their cards so they can print out these "spare copies".

3. Student lists

Get an up to date student list from the year coordinator. These are also available on Eemec but they may not be up to date. Ask the year coordinators to let you know if the list changes, for example if a student drops out, resits or swaps into a different rotation.

You will need the list for the entire year group as well as the list of students in each rotation, for details on what their next placement is. This will only be made up for the next rotation.

NB: Year 5- For some modules in Year 5 (GenMed, Surgery/anaesthetics) you also need to know which site their next placement is. For the MoE / GP module you need to know if they start on MoE or GP first.

4. Get a printing quote

You need to calculate the number of cards you need to get printed per rotation. Multiply the number of students in that rotation by the number of cards needed for each module in that rotation. It is a good idea to print off a few extra cards for each student in case students choose to do more than the required amount.

Worked example:

- ➢ For example for a rotation in year 5, if there are 60 students in this rotation:
- ➢ MoE: 4 cards
- ➢ GP: 4 cards
- ➢ Total: 8 cards
- ➢ Round up to 10 cards per student to allow for spare cards:
- ➢ 10 cards x 60 students = 600 cards for this rotation.

Do this for every rotation.

5. Obtain a printing quote

You need to get a quote from the printers.

Email to ssk them how much it costs to print the number of cards needed, double sided, in mono (mono means black and white).

Ask for the same size and thickness (250 gsm) as the previous batches. (Different thicknesses causes problems with scanning).

6. Generate an EIT

Use this quote to generate an EIT to pay for printing.

If you have not yet had EIT training, you will need to ask someone to do this for you (e.g. Fiona Willox. Fiona works part time so give her enough notice).

If there is enough money already in the printing account, you do not need to generate an EIT but remember to get a quote so we can keep track of expenses. If you are unsure how much our current balance is, you can ask the printers.

7. Mail merge

Now you need to mail merge the student list onto the FP template. See the mail merging SOP.

Remember to number the cards in the top right hand corner after the mail merged document has been created.

So following on from the above example:

- In year 5, if the student starts on the MoE/GP rotation, they get 10 cards so number the cards for this rotation 1- 10.

- For the second rotation, if they are on their General Medicine rotation and they get 10 cards, number the cards in their 2nd pack 11-20.

8. Send to printing

Send the mail merged document to the printers. This will be too large to email so you could use dropbox.

Graham Mackenzie is our contact at Edinburgh University Printing services (g.mackenzie@ed.ac.uk)

If Graham is on annual leave, send the file to his boss (Janet Delano) unless there is another contact named on his out of office email.

Remember to give him a date for when you want the FPs delivered by. Ask for your name to be written on the delivery. They usually take 7-10 days.

HOWEVER – they always take longer than they say they will, so add an extra week onto whatever deadline you give them. Remember to telephone a day before the deadline to remind him. The timetable has left a few days leeway in case printing runs late.

It is a good idea to print several batches at once and to do this well in advance, since they are less punctual during busy periods in the University calendar. However, this is limited by how many we can store.

MAKE UP FP PACKS

This section describes how to make up packs of FPs for distribution.

Each pack comprises of:

- Required number of feedback cards in number order
- 1 rubber band around their cards (don't use paperclips)
- 1-2 small envelopes
- 1 label per small envelope with the student's name, student's matric number and our return address printed on. The student should stick a label on each envelope in case they get lost.
- 1 C5 sized envelope to put everything inside
- 1 printed label for the C5 envelope with student name, year, rotation and placement
- 6 printed labels to stick on any "spare cards" and envelopes – containing name, matric no and QR code

9. Start making up FP packs

Year 3: One pack per student per rotation. There are 4 rotations so each student needs 4 packs over the course of the year. These can be made up before each rotation.

Year 4: One pack per student. All their cards get distributed at the start of the year.

Year 5: One pack per student per rotation. They do not use FPs on their elective but they do for the Student Assistantship, so you need 5 packs per student over the course of the year. These can be made up before each rotation.

When the FPs arrive from the printers, you can put the packs together.

Distribution

10. Distributing cards

You now need to arrange how to distribute the packs to the students.

This will depend on which year, module and site the student is based.

Year 3: Post Respiratory cards to xxx in internal mail. Leave the rest with the YCs for teaching fellows to collect. See appendix 2.

Year 4: All cards get distributed on the first day of the year. You need to book a seminar room in the Chancellors Building for a morning. You may need someone to help you with distribution. Lay packs out in alphabetical order for students to collect.

Year 5: Depends on module and site. Either post to other departments or hospitals or leave in the YC office for lecturers to collect. See appendix 2.

Year 5 assistantship: Distribute on the first day of the assistantship block. You need to book a seminar room in the Chancellors Building for a morning. You may need someone with distribution. Lay packs out in alphabetical order for students to collect.

There is a word document on Eemec detailing where students can collect their cards from.

If these arrangements change, make sure you let the relevant YC know any alternatives you have put in place. You also need to update the information on Eemec, although the YC may prefer to do this themselves.

11. If the packs are needed at hospital sites urgently:

Sometimes due to unforeseen circumstances, you may need to get the FP packs to a placement faster than it would be delivered by internal/external mail.

Examples might be if:

- printing has delivered the cards late
- a pack has been delivered to the wrong site
- a student returns to course at the last minute
- a student is resitting a module
- a student swaps rotations

A courier service is cheaper than manually transporting them by hand to peripheral hospitals (e.g. Fife, Borders). The University Data Protection officer has recommended that we only use a well known courier service (e.g. Hermes) and we make sure the receiver in the peripheral hospital knows when they are arriving.

Clearly write the name and location of the receiver on the address label (e.g. floor, ward, hospital) and our address as the return address.

It is more secure to send cards to staff members such as tutors or secretaries, rather than the student themselves, and email the student with details of where the pack can be collected from.

12. Uncollected cards

There are usually some cards that have not been collected by students.

Step A: Clarify why the pack has not been collected

Check with the relevant YC if the student is sick, still on programme, resitting or swapped placements.

If the student is off programme or off sick:

- Check with the YC if this is short or long terms and what arrangements have been made (e.g. are they are still expected to complete their FPs).

- If they still need their pack, wait until the student returns to programme and then follow step B below. (Ask the YC as they may prefer to communicate with the student themselves).

If the student is resitting:

- They may wish to use their FPs on their resit placement. Check with the YC (who may know from the module organiser) and follow step B.

If the student has swapped placements:

- Ask the YC where the student has now been placed, in what module and which site.

- *If the student is now based at the RIE:* email to ask them to collect their pack from the YC office. If the student is in Year 3, you could give it to the relevant teaching fellow (but email the student to check this is ok). Alternatively, they may ask you to post in the internal mail to one of the secretaries or consultants. Make sure the student has asked this secretary/consultant first (email the student to ask this. If not, you should post to the UG administrator). Get the name/address of the secretary and email the student (cc the secretary/consultant/UG administrator in) when you have posted it.

- *If the student is placed in another hospital:* post their pack to their new placement. Email the relevant secretary / UG administrator and cc the student in to let them know you are doing this.

Step B: The student still needs their FP pack

If in Year 3:

Module	Action
GI	WGH Students: post to Mr Reddy and let the MO know (Linda Pollock will often do this). RIE Students: Let the MO. Leave with the YC.
CVS	Clinical Teaching Fellow to distribute when they next see the student
Loco	Clinical Teaching Fellow to distribute when they next see the student
Resp	WGH students: send to the WGH Clinical Teaching Fellow RIE students: email student to collect from the YC office.

If in Year 4:

Leave in the YC office. Email the student to remind them to collect it. Some students prefer to have their packs posted out to their placement, in which case make sure you get the name/postal address of the secretary you can post it to. Write the name of the student on the envelope.

If there has been no reply for several weeks and the student is on a placement where FPs are compulsory, you should make sure the YC is aware and copy the MO into an email.

If in Year 5

Module	Action
GP	Liz Lamb will post to their GP placement
MoE	Sharon Moncrieff will contact the student will post directly to their placement
CLaH	Elaine Forbes will contact the student to ask them to collect from CLaH offices

GenMed	Leave with the YC office for students to collect. This usually means they have missed compulsory teaching (ILS or IV therapies day) which will need rescheduling. They will let the module organiser know.
Anaesthetics	Leave with relevant secretary for collection. If uncollected by the end of their week-long placement, they must email the year coordinator and the A+F administrator who will let the MO know. Students based at the RIE can collect their packs from the YC.
ED	Leave with secretary (Catherine Scott) for collection.
GenSurg	RIE students: leave with the Clinical Teaching Fellow. Other placements: relevant secretary / tutor will keep them for student to collect

Step C: Packs have not been collected by the end of the placement

The FPs are compulsory and students need to complete a certain number in order to complete the module. Failing to collect their FP packs should be flagged, in case there are other concerns about that student and they require additional support.

If packs have not been collected, let the MO, CTF and YC. Depending on the situation, they may want to communicate with the year head.

13. Scan cards in

You now need to scan the cards in.

Set the scanner as greyscale, 600dpi.

Scan the cards in batches of 30 cards.

Keep the batches in separate piles so you can check the emails have been received.

The student and the student's Personal Tutor can now view their FPs on their Feedback Gallery.

14. Calculate number of cards completed per module

We need to ensure that students have completed the correct number of cards required to pass the module. Most modules have an end-of-attachment meeting and the student brings their FPs to this meeting. Their tutor marks the number of FPs completed on their end-of-attachment form (Year 5) or professionalism form (year 4).

However, not all modules have an end-of-attachment meeting so we need to ensure students have completed the correct number of FPs for their module.

These modules are:

- HOPB (year 4)
- Renal (year 4)
- Neurosciences (year 4)
- Emergency Medicine (year 5)

You therefore need to count the number of cards per student. We are exploring using software to do this, but we will need to change the QR code on the cards to allow us to use this.

If students have not completed the required number for that module, make up a table including the number of cards completed and send to the MO and YC before the next BoE meeting. You will find the dates for the BoE meetings from the YC or on Eemec.

15. Send copies of cards to staff

This project relies heavily on staff engagement. Some tutors will have ticked a box at the bottom of the card, requesting a copy for their appraisal. It is important to do this to maintain tutors' goodwill and continue running the Project.

You will need to blank out the student's photo, name, QR code and matric number so the card is anonymised, then email the copy back to the tutor on the email address given. It is easier to do this on a scanned copy of the card.

Illegible email addresses: If the email address is illegible, there is an excel spreadsheet in the A&F administrator folder with tutors' names/email addresses in. Cross reference it with the staff member's GMC or NMC number. Make sure you get the correct staff member. If in doubt, always cross reference.

If there is no GMC number on the FP or in the spreadsheet and you still are not sure, email the tutor on the email address given, explaining that there is no GMC/NMC number recorded and you need to verify that this is the correct address.

16. Other audit data

We need to keep track of who completes FPs, in which module and where, to identify where to focus staff training.

There are tables started for this in the A+F administrator folder.

We need the following information for years 3, 4 and 5:

Tutor details: name, grade, professions (doctor/nurse etc), email address, no of FPs completed, site

Module details: module, site, grade of tutor, no of FPs completed

References

Ali, A.S., Bussey, M., O'flynn, K.J., Eardley, I., 2012. Quality of feedback using workplace based assessments in urological training. Br. J. Med. Surg. Urol. 5, 39–43.

Alicke, M.D., Sedikides, C., 2009. Self-enhancement and self-protection: What they are and what they do. Eur. Rev. Soc. Psychol. 20, 1–48.

Al-Mously, N., Nabil, N.M., Al-Babtain, S.A., Fouad Abbas, M.A., 2014a. Undergraduate medical students' perceptions on the quality of feedback received during clinical rotations. Med. Teach. 36, S17–S23.

Al-Mously, N., Nabil, N.M., Al-Babtain, S.A., Fouad Abbas, M.A., 2014b. Undergraduate medical students' perceptions on the quality of feedback received during clinical rotations. Med. Teach. 36, S17–S23.

Anseel, F., Beatty, A.S., Shen, W., Lievens, F., Sackett, P.R., 2015. How Are We Doing After 30 Years? A Meta-Analytic Review of the Antecedents and Outcomes of Feedback-Seeking Behavior. J. Manag. 41, 318–348.

Anseel, F., Lievens, F., Levy, P.E., 2007a. A self-motives perspective on feedback-seeking behavior: Linking organizational behavior and social psychology research. Int. J. Manag. Rev. 9, 211–236.

Anseel, F., Lievens, F., Levy, P.E., 2007b. A self-motives perspective on feedback-seeking behavior: Linking organizational behavior and social psychology research. Int. J. Manag. Rev. 9, 211–236.

Apramian, T., Cristancho, S., Watling, C., Lingard, L., 2016. (Re) Grounding grounded theory: a close reading of theory in four schools. Qual. Res. 1468794116672914.

Archer, J.C., 2010. State of the science in health professional education: effective feedback: Effective feedback in health professional education. Med. Educ. 44, 101–108. https://doi.org/10.1111/j.1365-2923.2009.03546.x

Artino Jr, A.R., Hemmer, P.A., Durning, S.J., 2011. Using self-regulated learning theory to understand the beliefs, emotions, and behaviors of struggling medical students. Acad. Med. 86, S35–S38.

Ashford, S., 2003. Reflections on the Looking Glass: A Review of Research on Feedback-Seeking Behavior in Organizations. J. Manag. 29, 773–799. https://doi.org/10.1016/S0149-2063(03)00079-5

Ashford, S.J., 1988. Individual strategies for coping with stress during organizational transitions. J. Appl. Behav. Sci. 24, 19–36.

Ashford, S.J., 1986a. Feedback-seeking in individual adaptation: A resource perspective. Acad. Manage. J. 29, 465–487.

Ashford, S.J., 1986b. Feedback-seeking in individual adaptation: A resource perspective. Acad. Manage. J. 29, 465–487.

ASHFORD, S.J., 1985. Proactive feedback seeking: The instrumental use of the information environment. J. Occup. Psychol. 58, 67–79.

Ashford, S.J., Blatt, R., Walle, D.V., 2003. Reflections on the looking glass: A review of research on feedback-seeking behavior in organizations. J. Manag. 29, 773–799.

Ashford, S.J., Cummings, L.L., 1985. Proactive feedback seeking: The instrumental use of the information environment. J. Occup. Psychol. 58, 67–79.

Ashford, S.J., Cummings, L.L., 1983a. Feedback as an individual resource: Personal strategies of creating information. Organ. Behav. Hum. Perform. 32, 370–398.

Ashford, S.J., Cummings, L.L., 1983b. Feedback as an individual resource: Personal strategies of creating information. Organ. Behav. Hum. Perform. 32, 370–398.

Ashford, S.J., Cummings, L.L., 1983c. Feedback as an individual resource: Personal strategies of creating information. Organ. Behav. Hum. Perform. 32, 370–398.

Ashford, S.J., Tsui, A.S., 1991. Self-regulation for managerial effectiveness: The role of active feedback seeking. Acad. Manage. J. 34, 251–280.

Bandura, A., 2011. Social cognitive theory. Handb. Soc. Psychol. Theor. 2012, 349–373.

Bandura, A., 2001. Social cognitive theory: An agentic perspective. Annu. Rev. Psychol. 52, 1–26.

Bandura, A., 1991. Social cognitive theory of self-regulation. Organ. Behav. Hum. Decis. Process. 50, 248–287.

Bandura, A., Wessels, S., 1997. Self-efficacy. W.H. Freeman & Company.

Bandura, A., Wessels, S., 1994. Self-efficacy.

Barbour, R.S., 2001. Checklists for improving rigour in qualitative research: a case of the tail wagging the dog? Br. Med. J. 322, 1115.

Barbour, R.S., Barbour, M., 2003. Evaluating and synthesizing qualitative research: the need to develop a distinctive approach. J. Eval. Clin. Pract. 9, 179–186.

Baron, R.A., 1988. Negative effects of destructive criticism: Impact on conflict, self-efficacy, and task performance. J. Appl. Psychol. 73, 199.

Barrett, A., Galvin, R., Scherpbier, A.J., Teunissen, P.W., O'shaughnessy, A., Horgan, M., 2017. Is the learning value of workplace-based assessment being realised? A qualitative study of trainer and trainee perceptions and experiences. Postgrad. Med. J. 93, 138–142.

Barry, C.A., Britten, N., Barber, N., Bradley, C., Stevenson, F., 1999. Using reflexivity to optimize teamwork in qualitative research. Qual. Health Res. 9, 26–44.

Bates, J., Konkin, J., Suddards, C., Dobson, S., Pratt, D., 2013. Student perceptions of assessment and feedback in longitudinal integrated clerkships. Med. Educ. 47, 362–374.

Baumeister, R.F., Tice, D.M., Hutton, D.G., 1989. Self-presentational motivations and personality differences in self-esteem. J. Pers. 57, 547–579.

Beard, J., Marriott, J., Purdie, H., Crossley, J., 2011. Assessing the surgical skills of trainees in the operating theatre: a prospective observational study of the methodology. Clin. Gov. Int. J.

Berkhout, J.J., Helmich, E., Teunissen, P.W., Vleuten, C.P., Jaarsma, A.D.C., 2017. How clinical medical students perceive others to influence their self-regulated learning. Med. Educ. 51, 269–279.

Berkowitz, S., 1997. Analyzing qualitative data. J Frechtling Sharp Westat Eds User-Friendly Handb. Mix. Method Eval. 91.

Bernichon, T., Cook, K.E., Brown, J.D., 2003. Seeking self-evaualive feedback: The interactive role of global self-esteem and specific self-views. J. Pers. Soc. Psychol. 84, 194.

Bindal, T., Wall, D., Goodyear, H.M., 2011a. Trainee doctors' views on workplace-based assessments: Are they just a tick box exercise? Med. Teach. 33, 919–927. https://doi.org/10.3109/0142159X.2011.558140

Bindal, T., Wall, D., Goodyear, H.M., 2011b. Trainee doctors' views on workplace-based assessments: are they just a tick box exercise? Med. Teach. 33, 919–927.

Bing-You, R., Hayes, V., Palka, T., Ford, M., Trowbridge, R., 2018. The Art (and Artifice) of Seeking Feedback: Clerkship Students' Approaches to Asking for Feedback. Acad. Med. 93, 1218–1226.

Bing-You, R.G., Trowbridge, R.L., 2009. Why medical educators may be failing at feedback. Jama 302, 1330–1331.

Blaikie, N., 2007. Approaches to social enquiry: Advancing knowledge. Polity.

Blascovich, J., Tomaka, J., 1991. Measures of self-esteem.

Boehler, M.L., Rogers, D.A., Schwind, C.J., Mayforth, R., Quin, J., Williams, R.G., Dunnington, G., 2006. An investigation of medical student reactions to feedback: a randomised controlled trial. Med. Educ. 40, 746–749. https://doi.org/10.1111/j.1365-2929.2006.02503.x

Boekaerts, M., 1992. The adaptable learning process: Initiating and maintaining behavioural change. Appl. Psychol. 41, 377–397.

Bogdan, R., Biklen, S., 1998. Introduction to qualitative research in education. Engl. Pearson.

Bogetz, A.L., Orlov, N., Blankenburg, R., Bhavaraju, V., McQueen, A., Rassbach, C., 2018. How Residents Learn From Patient Feedback: A Multi-Institutional Qualitative Study of Pediatrics Residents' Perspectives. J. Grad. Med. Educ. 10, 176–184.

Bok, H.G., Jaarsma, D.A., Spruijt, A., Van Beukelen, P., Van Der Vleuten, C.P., Teunissen, P.W., 2016. Feedback-giving behaviour in performance evaluations during clinical clerkships. Med. Teach. 38, 88–95.

Bok, H.G., Teunissen, P.W., Favier, R.P., Rietbroek, N.J., Theyse, L.F., Brommer, H., Haarhuis, J.C., van Beukelen, P., van der Vleuten, C.P., Jaarsma, D.A., 2013a. Programmatic assessment of competency-based workplace learning: when theory meets practice. BMC Med. Educ. 13, 123.

Bok, H.G., Teunissen, P.W., Spruijt, A., Fokkema, J.P., van Beukelen, P., Jaarsma, D.A., van der Vleuten, C.P., 2013b. Clarifying students' feedback-seeking behaviour in clinical clerkships. Med. Educ. 47, 282–291.

Bok, H.G.J., Jaarsma, D.A.D.C., Spruijt, A., Van Beukelen, P., Van Der Vleuten, C.P.M., Teunissen, P.W., 2016. Feedback-giving behaviour in performance evaluations during clinical clerkships. Med. Teach. 38, 88–95. https://doi.org/10.3109/0142159X.2015.1017448

Bok, H.G.J., Teunissen, P.W., Spruijt, A., Fokkema, J.P.I., van Beukelen, P., Jaarsma, D.A.D.C., van der Vleuten, C.P.M., 2013. Clarifying students' feedback-seeking behaviour in clinical clerkships. Med. Educ. 47, 282–291. https://doi.org/10.1111/medu.12054

Bose, M.M., Gijselaers, W.H., 2013. Why supervisors should promote feedback-seeking behaviour in medical residency. Med. Teach. 35, e1573–e1583.

Boud, D., 2013. Enhancing learning through self-assessment. Routledge.

Boud, D., Molloy, E., 2013. Feedback in higher and professional education: understanding it and doing it well. Routledge.

Boursicot, K., Kemp, S., Wilkinson, T., Findyartini, A., Canning, C., Cilliers, F., Fuller, R., 2021. Performance assessment: Consensus statement and recommendations from the 2020 Ottawa Conference. Med. Teach. 43, 58–67.

Bowen, L., Marshall, M., Murdoch-Eaton, D., 2017a. Medical Student Perceptions of Feedback and Feedback Behaviors Within the Context of the "Educational Alliance." Acad. Med. 92, 1303–1312.

Bowen, L., Marshall, M., Murdoch-Eaton, D., 2017b. Medical Student Perceptions of Feedback and Feedback Behaviors Within the Context of the "Educational Alliance": Acad. Med. 1. https://doi.org/10.1097/ACM.0000000000001632

Britain), G.M.C. (Great, 2014. The State of Medical Education and Practice in the UK, 2014. General Medical Council.

Bryant, A., Charmaz, K., 2007. Grounded theory research: Methods and practices. Sage Handb. Grounded Theory 1–28.

Buckley, S., Coleman, J., Davison, I., Khan, K.S., Zamora, J., Malick, S., Morley, D., Pollard, D., Ashcroft, T., Popovic, C., Sayers, J., 2009. The educational effects of portfolios on undergraduate student learning: A Best Evidence Medical Education (BEME) systematic review. BEME Guide No. 11. Med. Teach. 31, 282–298. https://doi.org/10.1080/01421590902889897

Butler, D.L., Winne, P.H., 1995a. Feedback and self-regulated learning: A theoretical synthesis. Rev. Educ. Res. 65, 245–281.

Butler, D.L., Winne, P.H., 1995b. Feedback and self-regulated learning: A theoretical synthesis. Rev. Educ. Res. 65, 245–281.

Butler, R., 1993. Effects of task-and ego-achievement goals on information seeking during task engagement. J. Pers. Soc. Psychol. 65, 18.

Cahill, H., Coffey, J., Sanci, L., 2015. 'I wouldn't get that feedback from anywhere else': learning partnerships and the use of high school students as simulated patients to enhance medical students' communication skills. BMC Med. Educ. 15. https://doi.org/10.1186/s12909-015-0315-4

Carless, D., 2012. Trust and its role in facilitating dialogic feedback, in: Feedback in Higher and Professional Education. Routledge, pp. 100–113.

Carless, D., Salter, D., Yang, M., Lam, J., 2011. Developing sustainable feedback practices. Stud. High. Educ. 36, 395–407.

Cassidy, S., Coffey, M., Murphy, F., 2017. 'Seeking authorization': a grounded theory exploration of mentors' experiences of assessing nursing students on the borderline of achievement of competence in clinical practice. J. Adv. Nurs. 73, 2167–2178.

Castanelli, D.J., Weller, J.M., Molloy, E., Bearman, M., 2021. Trust, power and learning in workplace-based assessment: The trainee perspective. Med. Educ.

Charmaz, K., 2014a. Constructing grounded theory. Sage.

Charmaz, K., 2014b. Constructing grounded theory. Sage.

Charmaz, K., 2008. Constructionism and the grounded theory method. Handb. Constr. Res. 397–412.

Charmaz, K., 2006. Constructing grounded theory: A practical guide through qualitative analysis. Sage.

Charmaz, K., Thornberg, R., 2020. The pursuit of quality in grounded theory. Qual. Res. Psychol. 1–23.

Chaudhry, Z., Campagna-Vaillancourt, M., Husein, M., Varshney, R., Roth, K., Gooi, A., Nguyen, L., 2019. Perioperative Teaching and Feedback: How are we doing in Canadian OTL-HNS programs? J. Otolaryngol. - Head Neck Surg. 48, 6. https://doi.org/10.1186/s40463-019-0330-2

Chen, Z., Lam, W., Zhong, J.A., 2007. Leader-member exchange and member performance: A new look at individual-level negative feedback-seeking behavior and team-level empowerment climate. J. Appl. Psychol. 92, 202–211.

Clarke, A.E., 2007. Grounded theory: Critiques, debates, and situational analysis. Handbook.

Clarke, A.E., 2003. Situational analyses: Grounded theory mapping after the postmodern turn. Symb. Interact. 26, 553–576.

Cleland, J., Leggett, H., Sandars, J., Costa, M.J., Patel, R., Moffat, M., 2013. The remediation challenge: theoretical and methodological insights from a systematic review. Med. Educ. 47, 242–251.

Cohen, L., Manion, L., Morrison, K., 1994. Educational research methodology. Athens Metaixmio.

Cook, C., Heath, F., Thompson, R.L., 2000. A meta-analysis of response rates in web-or internet-based surveys. Educ. Psychol. Meas. 60, 821–836.

Cook, D.A., 2005. The research we still are not doing: an agenda for the study of computer-based learning. Acad. Med. 80, 541–548.

Corbin, J., Strauss, A., 2008. Basics of qualitative research: Techniques and procedures for developing grounded theory.

Council, G.M., 2018. National training surveys 2018: Initial findings report.

Council, General Medcial, 2009. Tomorrow's doctors: outcomes and standards for undergraduate medical education. Manch. UK Gen. Med. Counc.

Council, General Medical, 2009. Tomorrow's doctors: outcomes and standards for undergraduate medical education. Manch. UK Gen. Med. Counc.

Couper, M.P., 2000. Review: Web surveys: A review of issues and approaches. Public Opin. Q. 64, 464–494.

Creswell, J.W., 1998. Qualitative inquiry and research design: Choosing among five tradition. Thousand Oaks, CA: Sage.

Crommelinck, M., Anseel, F., 2013a. Understanding and encouraging feedback-seeking behaviour: a literature review. Med. Educ. 47, 232–241.

Crommelinck, M., Anseel, F., 2013b. Understanding and encouraging feedback-seeking behaviour: a literature review: Feedback-seeking behaviour: a review. Med. Educ. 47, 232–241. https://doi.org/10.1111/medu.12075

Crommelinck, M., Anseel, F., 2013c. Understanding and encouraging feedback-seeking behaviour: a literature review. Med. Educ. 47, 232–241.

Crossley, J., Jolly, B., 2012. Making sense of work-based assessment: ask the right questions, in the right way, about the right things, of the right people. Med. Educ. 46, 28–37.

Cunningham, C.T., Quan, H., Hemmelgarn, B., Noseworthy, T., Beck, C.A., Dixon, E., Samuel, S., Ghali, W.A., Sykes, L.L., Jetté, N., 2015. Exploring physician specialist response rates to web-based surveys. BMC Med. Res. Methodol. 15. https://doi.org/10.1186/s12874-015-0016-z

Daelmans, H.E.M., Hoogenboom, R.J.I., Donker, A.J.M., Scherpbier, A.J.J.A., Stehouwer, C.D.A., Vleuten, C.P.M., 2004. Effectiveness of clinical rotations as a learning environment for achieving competences. Med Teach 26. https://doi.org/10.1080/01421590410001683195

Dannefer, E.F., 2013. Beyond assessment of learning toward assessment for learning: educating tomorrow's physicians. Med. Teach. 35, 560–563.

Davis, D.A., Mazmanian, P.E., Fordis, M., Van Harrison, R., Thorpe, K.E., Perrier, L., 2006. Accuracy of physician self-assessment compared with observed measures of competence: a systematic review. Jama 296, 1094–1102.

de Jong, L.H., Favier, R.P., van der Vleuten, C.P.M., Bok, H.G.J., 2017. Students' motivation toward feedback-seeking in the clinical workplace. Med. Teach. 39, 954–958. https://doi.org/10.1080/0142159X.2017.1324948

De Stobbeleir, K.E., Ashford, S.J., Buyens, D., 2011. Self-regulation of creativity at work: The role of feedback-seeking behavior in creative performance. Acad. Manage. J. 54, 811–831.

Deci, E.E., Ryan, R.M., 1985. I n tri n sic M oti va tio n a n d S elf-D etermi n a tio n i n Hu m a n B e h av ior. P N Um P Ress.

Dehmer, J.J., Amos, K.D., Farrell, T.M., Meyer, A.A., Newton, W.P., Meyers, M.O., 2013. Competence and confidence with basic procedural skills: the experience and opinions of fourth-year medical students at a single institution. Acad. Med. 88, 682–687.

Delva, D., Sargeant, J., Miller, S., Holland, J., Alexiadis Brown, P., Leblanc, C., Lightfoot, K., Mann, K., 2013. Encouraging residents to seek feedback. Med. Teach. 35, e1625–e1631.

Denzin, N.K., 1978. Triangulation: A case for methodological evaluation and combination. Sociol. Methods 339–357.

Denzin, N.K., Lincoln, Y.S., 2005. The Sage handbook of qualitative research.

Denzin, N.K., Lincoln, Y.S., 1994. Handbook of qualitative research. Sage publications, inc.

Driessen, E., Overeem, K., van Tartwijk, J., 2011. Learning from practice: mentoring, feedback and portfolios. Med. Educ. Theory Pract. Edinb. Elsevier.

Driessen, E., Scheele, F., 2013. What is wrong with assessment in postgraduate training? Lessons from clinical practice and educational research. Med. Teach. 35, 569–574.

Driessen, E.W., Muijtjens, A.M., Van Tartwijk, J., Van Der Vleuten, C.P., 2007. Web-or paper-based portfolios: is there a difference? Med. Educ. 41, 1067–1073.

Dweck, C., Molden, D.C., 2000. Self theories. Handb. Competence Motiv. 122–140.

Dweck, C.S., Leggett, E.L., 1988. A social-cognitive approach to motivation and personality. Psychol. Rev. 95, 256.

Earley, P.C., Northcraft, G.B., Lee, C., Lituchy, T.R., 1990. Impact of process and outcome feedback on the relation of goal setting to task performance. Acad. Manage. J. 33, 87–105.

Edinburgh Medical School | The University of Edinburgh [WWW Document], n.d. URL http://www.ed.ac.uk/medicine-vet-medicine/edinburgh-medical-school (accessed 9.12.17).

Edwards, P., Roberts, I., Clarke, M., DiGuiseppi, C., Pratap, S., Wentz, R., Kwan, I., 2002. Increasing response rates to postal questionnaires: systematic review. Bmj 324, 1183.

Elizabeth, J.E., Hughes, S., 1986. An assessment of the preregistration year experience. Br Med J Clin Res Ed 293, 1559–1559.

Ende, J., 1983. Feedback in clinical medical education. Jama 250, 777–781.

Epstein, R.M., Hundert, E.M., 2002. Defining and assessing professional competence. Jama 287, 226–235.

Eva, K.W., 2009. Diagnostic error in medical education: where wrongs can make rights. Adv. Health Sci. Educ. 14, 71–81.

Eva, K.W., Armson, H., Holmboe, E., Lockyer, J., Loney, E., Mann, K., Sargeant, J., 2012a. Factors influencing responsiveness to feedback: on the interplay between fear, confidence, and reasoning processes. Adv. Health Sci. Educ. 17, 15–26.

Eva, K.W., Armson, H., Holmboe, E., Lockyer, J., Loney, E., Mann, K., Sargeant, J., 2012b. Factors influencing responsiveness to feedback: on the interplay between fear, confidence, and reasoning processes. Adv. Health Sci. Educ. 17, 15–26.

Eva, K.W., Regehr, G., 2008. "I'll never play professional football" and other fallacies of self-assessment. J. Contin. Educ. Health Prof. 28, 14–19.

Eva, K.W., Regehr, G., 2005. Self-assessment in the health professions: a reformulation and research agenda. Acad. Med. 80, S46–S54.

Fan, W., Yan, Z., 2010. Factors affecting response rates of the web survey: A systematic review. Comput. Hum. Behav. 26, 132–139. https://doi.org/10.1016/j.chb.2009.10.015

Fedor, D.B., Rensvold, R.B., Adams, S.M., 1992. An investigation of factors expected to affect feedback seeking: A longitudinal field study. Pers. Psychol. 45, 779–802.

Freeman, T., 2006. "Best practice" in focus group research: making sense of different views. J. Adv. Nurs. 56, 491–497. https://doi.org/10.1111/j.1365-2648.2006.04043.x

Fu, R.-H., Yu-Hsueh, C., Quattri, F., Monrouxe, L.V., 2019. 'I did not check if the teacher gave feedback': a qualitative analysis of Taiwanese postgraduate year 1 trainees' talk around e-portfolio feedback-seeking behaviours. BMJ Open 9.

Fung, M.F.K., Walker, M., Fung, K.F.K., Temple, L., Lajoie, F., Bellemare, G., Bryson, S.C., 2000. An Internet-based learning portfolio in resident education: the KOALA^{TM} multicentre programme. Med. Educ. 34, 474–479.

Garner, M.S., Gusberg, R.J., Kim, A.W., 2014a. The positive effect of immediate feedback on medical student education during the surgical clerkship. J. Surg. Educ. 71, 391–397.

Garner, M.S., Gusberg, R.J., Kim, A.W., 2014b. The positive effect of immediate feedback on medical student education during the surgical clerkship. J. Surg. Educ. 71, 391–397.

Gaunt, A., Markham, D.H., Pawlikowska, T.R., 2018. Exploring the Role of Self-Motives in Postgraduate Trainees' Feedback-Seeking Behavior in the Clinical Workplace: A Multicenter Study of Workplace-Based Assessments From the United Kingdom. Acad. Med. 93, 1576–1583.

Gaunt, A., Patel, A., Fallis, S., Rusius, V., Mylvaganam, S., Royle, T.J., Almond, M., Markham, D.H., Pawlikowska, T.R., 2017a. Surgical trainee feedback-seeking behavior in the context of workplace-based assessment in clinical settings. Acad. Med. 92, 827–834.

Gaunt, A., Patel, A., Rusius, V., Royle, T.J., Markham, D.H., Pawlikowska, T., 2017b. 'Playing the game': How do surgical trainees seek feedback using workplace-based assessment? Med. Educ. 51, 953–962.

Gil, D.H., Heins, M., Jones, P.B., 1984. Perceptions of medical school faculty members and students on clinical clerkship feedback. Acad. Med. 59, 856–64.

Glaser, B., Strauss, A., 1967. The discovery of grounded theory: Strategies for qualitative research. Chic. Aldine Google Sch. Poss J Jezewski MA 2002 Role Mean. Susto Mex. Am. Explan. Model Type 2, 360–377.

Glaser, B.G., 2005. The grounded theory perspective III: Theoretical coding. Sociology Press.

Glaser, B.G., 1992. Emergence versus forcing: Basics of grounded theory. Mill Valley, CA: Sociology Press.

Glaser, B.G., 1978. Theoretical sensitivity: Advances in the methodology of grounded theory. Sociology Pr.

Glaser, B.G., Strauss, A.L., 1967. The discovery of grounded theory: strategies for qualitative theory. N. B. Aldine Trans.

Gonnella, J.S., Erdmann, J.B., Hojat, M., 2004. An empirical study of the predictive validity of number grades in medical school using 3 decades of longitudinal data: implications for a grading system. Med. Educ. 38, 425–434.

Govaerts, M., van der Vleuten, C.P., 2013. Validity in work-based assessment: expanding our horizons. Med. Educ. 47, 1164–1174.

Gratrix, L., Barrett, D., 2017. Desperately seeking consistency: Student nurses' experiences and expectations of academic supervision. Nurse Educ. Today 48, 7–12.

Guba, E.G., 1990. The Alternative Paradigm Dialog. In. EG Guba (ed.) The Paradigm Dialogue (p. 17-27). Newbury Park: Sage Publications.

Guba, E.G., Lincoln, Y.S., 2005. Paradigmatic Controversies, Contradictions, and Emerging Confluences.

Guba, E.G., Lincoln, Y.S., 1994. Competing paradigms in qualitative research. Handb. Qual. Res. 2, 105.

Hammick, M., Dornan, T., Steinert, Y., 2010. Conducting a best evidence systematic review. Part 1: From idea to data coding. BEME Guide No. 13. Med. Teach. 32, 3–15.

Harrison, C., Wass, V., 2016. The challenge of changing to an assessment for learning culture.

Harrison, C.J., Könings, K.D., Schuwirth, L.W., Wass, V., van der Vleuten, C.P., 2017. Changing the culture of assessment: the dominance of the summative assessment paradigm. BMC Med. Educ. 17, 73.

Hattie, J., Timperley, H., 2007. The Power of Feedback. Rev. Educ. Res. 77, 81–112. https://doi.org/10.3102/003465430298487

Health, D. of, 2015. Annual Report of the Chief Medical Officer 2014. Dandy Booksellers Limited.

Henry, D., Vesel, T., Boscardin, C., van Schaik, S., 2018. Motivation for feedback-seeking among pediatric residents: a mixed methods study. BMC Med. Educ. 18, 145.

Hickey, G., 1997. The use of literature in grounded theory. NT Res. 2, 371–378.

Hodges, B., 2013. Assessment in the post-psychometric era: learning to love the subjective and collective. Med. Teach. 35, 564–568.

Hofmann, D.A., Lei, Z., Grant, A.M., 2009. Seeking help in the shadow of doubt: the sensemaking processes underlying how nurses decide whom to ask for advice. J. Appl. Psychol. 94, 1261.

Hwang, A., Francesco, A.M., 2010. The influence of individualism–collectivism and power distance on use of feedback channels and consequences for learning. Acad. Manag. Learn. Educ. 9, 243–257.

Ilgen, D.R., Fisher, C.D., Taylor, M.S., 1979. Consequences of individual feedback on behavior in organizations. J. Appl. Psychol. 64, 349.

Ilies, R., De Pater, I.E., Judge, T., 2007. Differential affective reactions to negative and positive feedback, and the role of self-esteem. J. Manag. Psychol. 22, 590–609. https://doi.org/10.1108/02683940710778459

Illing, J., 2007. Thinking about research: frameworks, ethics and scholarship. Association for the Study of Medical Education.

Ingwersen, K., Lyons, N., Hitch, D., 2017. Perceptions of fieldwork in occupational therapy. Clin. Teach. 14, 55–59.

Jackson, D., Wall, D., 2010. An evaluation of the use of the mini-CEX in the foundation programme. Br. J. Hosp. Med. 2005 71, 584–588.

Janssen, O., Prins, J., 2007a. Goal orientations and the seeking of different types of feedback information. J. Occup. Organ. Psychol. 80, 235–249.

Janssen, O., Prins, J., 2007b. Goal orientations and the seeking of different types of feedback information. J. Occup. Organ. Psychol. 80, 235–249.

Kaplan, A., Maehr, M.L., 2007. The contributions and prospects of goal orientation theory. Educ. Psychol. Rev. 19, 141–184.

Kennedy, T., Lingard, L.A., 2006. Making sense of grounded theory in medical education. Med Educ 40. https://doi.org/10.1111/j.1365-2929.2005.02378.x

Kennedy, T.J., Lingard, L.A., 2006. Making sense of grounded theory in medical education. Med. Educ. 40, 101–108.

Kennedy, T.J.T., Lingard, L.A., 2006. Making sense of grounded theory in medical education. Med. Educ. 40, 101–108. https://doi.org/10.1111/j.1365-2929.2005.02378.x

Kidd, S.A., Kral, M.J., 2005. Practicing participatory action research. J. Couns. Psychol. 52, 187.

Kinicki, A.J., Prussia, G.E., Wu, B.J., McKee-Ryan, F.M., 2004. A covariance structure analysis of employees' response to performance feedback. J. Appl. Psychol. 89, 1057.

Kitzinger, J., 1995. Qualitative research. Introducing focus groups. BMJ 311, 299.

Kitzinger, J., 1994. The methodology of focus groups: the importance of interaction between research participants. Sociol. Health Illn. 16, 103–121.

Klassen, R.M., Klassen, J.R.L., 2018. Self-efficacy beliefs of medical students: a critical review. Perspect. Med. Educ. 7, 76–82.

Kluger, A.N., DeNisi, A., 1996. The effects of feedback interventions on performance: A historical review, a meta-analysis, and a preliminary feedback intervention theory. American Psychological Association.

Kogan, J.R., Conforti, L.N., Bernabeo, E.C., Durning, S.J., Hauer, K.E., Holmboe, E.S., 2012. Faculty staff perceptions of feedback to residents after direct observation of clinical skills. Med Educ 46. https://doi.org/10.1111/j.1365-2923.2011.04137.x

Kogan, J.R., Holmboe, E.S., Hauer, K.E., 2009. Tools for direct observation and assessment of clinical skills of medical trainees: a systematic review. Jama 302, 1316–1326.

Krueger, R.A., Casey, M.A., 2000. Focus groups. Thousand Oaks, CA: Sage.

Krueger Richard, A., Anne, C.M., 1994. Focus groups. A practical guide for applied research. Thousand Oaks: Sage.

Kruger, J., Dunning, D., 1999. Unskilled and unaware of it: how difficulties in recognizing one's own incompetence lead to inflated self-assessments. J. Pers. Soc. Psychol. 77, 1121.

Kulhavy, R.W., White, M.T., Topp, B.W., Chan, A.L., Adams, J., 1985. Feedback complexity and corrective efficiency. Contemp. Educ. Psychol. 10, 285–291.

Kusurkar, R.A., Ten Cate, T.J., Van Asperen, M., Croiset, G., 2011a. Motivation as an independent and a dependent variable in medical education: a review of the literature. Med. Teach. 33, e242–e262.

Kusurkar, R.A., Ten Cate, T.J., Van Asperen, M., Croiset, G., 2011b. Motivation as an independent and a dependent variable in medical education: a review of the literature. Med. Teach. 33, e242–e262.

Kuzel, A.J., 1992. Sampling in qualitative inquiry.

Lapan, S.D., Quartaroli, M.T., Riemer, F.J., 2011. Qualitative research: An introduction to methods and designs. John Wiley & Sons.

Lawson, M., Nestel, D., Jolly, B., 2004. An e-portfolio in health professional education. Med. Educ. 38, 569–570.

Lefroy, J., Hawarden, A., Gay, S.P., McKinley, R.K., Cleland, J., 2015. Grades in formative workplace-based assessment: a study of what works for whom and why. Med. Educ. 49, 307–320.

Lefroy, J.E., Hawarden, A., Gay, S.P., McKinley, R.K., 2017. Does formal workplace based assessment add value to informal feedback? MedEdPublish 6, 27–27.

Leopold, S.S., Morgan, H.D., Kadel, N.J., Gardner, G.C., Schaad, D.C., Wolf, F.M., 2005. Impact of educational intervention on confidence and competence in the performance of a simple surgical task. JBJS 87, 1031–1037.

Levy, P.E., Cober, R.T., Miller, T., 2002. The effect of transformational and transactional leadership perceptions on feedback-seeking intentions. J. Appl. Soc. Psychol. 32, 1703–1720.

Lincoln, Y.S., Guba, E.G., 1985. Naturalistic inquiry. sage.

Lincoln, Y.S., Lynham, S.A., Guba, E.G., 2011. Paradigmatic controversies, contradictions, and emerging confluences, revisited. Sage Handb. Qual. Res. 4, 97–128.

Locke, E.A., Latham, G.P., 1990. A theory of goal setting & task performance. Prentice-Hall, Inc.

Lörwald, A.C., Lahner, F.-M., Greif, R., Berendonk, C., Norcini, J., Huwendiek, S., 2018. Factors influencing the educational impact of Mini-CEX and DOPS: a qualitative synthesis. Med. Teach. 40, 414–420.

Lörwald, A.C., Lahner, F.-M., Mooser, B., Perrig, M., Widmer, M.K., Greif, R., Huwendiek, S., 2019. Influences on the implementation of Mini-CEX and DOPS for postgraduate medical trainees' learning: A grounded theory study. Med. Teach. 41, 448–456.

Malhotra, S., Hatala, R., Courneya, C.-A., 2008. Internal medicine residents' perceptions of the Mini-Clinical Evaluation Exercise. Med. Teach. 30, 414–419.

Mann, K., van der Vleuten, C., Eva, K., Armson, H., Chesluk, B., Dornan, T., Holmboe, E., Lockyer, J., Loney, E., Sargeant, J., 2011a. Tensions in informed self-assessment: how the desire for feedback and reticence to collect and use it can conflict. Acad. Med. 86, 1120–1127.

Mann, K., van der Vleuten, C., Eva, K., Armson, H., Chesluk, B., Dornan, T., Holmboe, E., Lockyer, J., Loney, E., Sargeant, J., 2011b. Tensions in informed self-assessment: how the desire for feedback and reticence to collect and use it can conflict. Acad. Med. 86, 1120–1127.

Massie, J., Ali, J.M., 2016. Workplace-based assessment: a review of user perceptions and strategies to address the identified shortcomings. Adv. Health Sci. Educ. 21, 455–473.

Mattick, K., Knight, L., 2009. The importance of vocational and social aspects of approaches to learning for medical students. Adv. Health Sci. Educ. 14, 629–644.

Mattick, K., Monrouxe, L.V., Bullock, A., Cole, J., Gormley, G., Kaufhold, K., Kelly, N., Rees, C.E., Scheffler, G., 2014. How prepared are UK medical graduates for practice? Final report from a programme of research commissioned by the General Medical Council, submitted June 2014.

Mays, N., Pope, C., 1995. Rigour and qualitative research. BMJ 311, 109.

McFarlane, E., Olmsted, M.G., Murphy, J., Hill, C.A., 2007. Nonresponse Bias in a Mail Survey of Physicians. Eval. Health Prof. 30, 170–185. https://doi.org/10.1177/0163278707300632

McGhee, J., Crowe, C., Kraut, A., Pierce, A., Porat, A., Schnapp, B., Laurie, A., Fu, R., Yarris, L., 2017. Do Emergency Medicine Residents Prefer Resident-initiated or Attending-initiated Feedback? AEM Educ. Train. 1, 15–20.

Milan, F.B., Dyche, L., Fletcher, J., 2011. "How am I doing?" Teaching medical students to elicit feedback during their clerkships. Med. Teach. 33, 904–910.

Miller, A., Archer, J., 2010. Impact of workplace based assessment on doctors' education and performance: a systematic review. Bmj 341.

Mitchell, C., Bhat, S., Herbert, A., Baker, P., 2013. Workplace-based assessments in Foundation Programme training: do trainees in difficulty use them differently? Med. Educ. 47, 292–300.

Moreno, R., 2004. Decreasing cognitive load for novice students: Effects of explanatory versus corrective feedback in discovery-based multimedia. Instr. Sci. 32, 99–113.

Morrison, E.W., 2002. Information seeking within organizations. Hum. Commun. Res. 28, 229–242.

Morrison, E.W., 1993. Longitudinal study of the effects of information seeking on newcomer socialization. J. Appl. Psychol. 78, 173.

Morrison, E.W., Bies, R.J., 1991. Impression Management in the Feedback-Seeking Process: A Literaturereview and Research Agenda. Acad. Manage. Rev. 16, 522–541.

Morrison, E.W., Vancouver, J.B., 2000. Within-person analysis of information seeking: The effects of perceived costs and benefits. J. Manag. 26, 119–137.

Morrow, S.L., 2007. Qualitative Research in Counseling Psychology: Conceptual Foundations. Couns. Psychol. 35, 209–235. https://doi.org/10.1177/0011000006286990

Morrow, S.L., 2005a. Quality and trustworthiness in qualitative research in counseling psychology. J. Couns. Psychol. 52, 250.

Morrow, S.L., 2005b. Quality and trustworthiness in qualitative research in counseling psychology. J. Couns. Psychol. 52, 250.

MORSE, J.M., STERN, P.N., CORBIN, J., BOWERS, B., CHARMAZ, K., CLARKE, A.E., 2009. DEVELOPING GROUNDED THEORY.

Murdoch-Eaton, D., Sargeant, J., 2012. Maturational differences in undergraduate medical students' perceptions about feedback: Maturation in feedback perception. Med. Educ. 46, 711–721. https://doi.org/10.1111/j.1365-2923.2012.04291.x

Murdoch-Eaton, D., Sargeant, J., 2012. Maturational differences in undergraduate medical students' perceptions about feedback. Med. Educ. 46, 711–721.

Murphy, P.K., Alexander, P.A., 2000. A motivated exploration of motivation terminology. Contemp. Educ. Psychol. 25, 3–53.

Nadler, A., Ellis, S., Bar, I., 2003. To seek or not to seek: The relationship between help seeking and job performance evaluations as moderated by task-relevant expertise. J. Appl. Soc. Psychol. 33, 91–109.

Nicol, D.J., Macfarlane-Dick, D., 2006a. Formative assessment and self-regulated learning: A model and seven principles of good feedback practice. Stud. High. Educ. 31, 199–218.

Nicol, D.J., Macfarlane-Dick, D., 2006b. Formative assessment and self-regulated learning: A model and seven principles of good feedback practice. Stud. High. Educ. 31, 199–218.

Norcini, J., Burch, V., 2007. Workplace-based assessment as an educational tool: AMEE Guide No. 31. Med. Teach. 29, 855–871.

Northcraft, G.B., Ashford, S.J., 1990a. The preservation of self in everyday life: The effects of performance expectations and feedback context on feedback inquiry. Organ. Behav. Hum. Decis. Process. 47, 42–64.

Northcraft, G.B., Ashford, S.J., 1990b. The preservation of self in everyday life: The effects of performance expectations and feedback context on feedback inquiry. Organ. Behav. Hum. Decis. Process. 47, 42–64.

O'Brien, B.C., Harris, I.B., Beckman, T.J., Reed, D.A., Cook, D.A., 2014. Standards for reporting qualitative research: A synthesis of recommendations. Acad. Med. 89, 1245–1251.

Oktaria, D., Soemantri, D., 2018. Undergraduate Medical Students' Perceptions on Feedback-Seeking Behaviour. Malays. J. Med. Sci. MJMS 25, 75.

Onwuegbuzie, A.J., Dickinson, W.B., Leech, N.L., Zoran, A.G., 2009. A qualitative framework for collecting and analyzing data in focus group research. Int. J. Qual. Methods 8, 1–21.

Paas, F., Renkl, A., Sweller, J., 2003. Cognitive load theory and instructional design: Recent developments. Educ. Psychol. 38, 1–4.

Pal, L.M., Dixon, R.E., Faull, C.M., 2014. Utilising feedback from patients and their families as a learning strategy in a foundation degree in palliative and supportive care: A qualitative study. Nurse Educ. Today 34, 319–324.

Park, G., Schmidt, A.M., Scheu, C., DeShon, R.P., 2007. A process model of goal orientation and feedback seeking. Hum. Perform. 20, 119–145.

Patel, R., Tarrant, C., Bonas, S., Yates, J., Sandars, J., 2015. The struggling student: a thematic analysis from the self-regulated learning perspective. Med. Educ. 49, 417–426.

Patton, M.Q., 2002. Two decades of developments in qualitative inquiry: A personal, experiential perspective. Qual. Soc. Work 1, 261–283.

Pelgrim, E.A., Kramer, A.W., Mokkink, H.G., van der Vleuten, C.P., 2014. Factors influencing trainers' feedback-giving behavior: a cross-sectional survey. BMC Med. Educ. 14, 65.

Pelgrim, E.A.M., Kramer, A.W.M., Mokkink, H.G.A., van der Vleuten, C.P.M., 2012. The process of feedback in workplace-based assessment: organisation, delivery, continuity: Feedback in workplace-based assessment. Med. Educ. 46, 604–612. https://doi.org/10.1111/j.1365-2923.2012.04266.x

Pereira, E.A., Dean, B.J., 2009. British surgeons' experiences of mandatory online workplace-based assessment. J. R. Soc. Med. 102, 287–293.

Pintrich, P.R., De Groot, E.V., 1990. Motivational and self-regulated learning components of classroom academic performance. J. Educ. Psychol. 82, 33.

Pintrich, P.R., Zusho, A., 2002. Student motivation and self-regulated learning in the college classroom, in: Higher Education: Handbook of Theory and Research. Springer, pp. 55–128.

Pizzimenti, M.A., Axelson, R.D., 2015. Assessing student engagement and self-regulated learning in a medical gross anatomy course. Anat. Sci. Educ. 8, 104–110.

Polkinghorne, D.E., 2005. Language and meaning: Data collection in qualitative research. J. Couns. Psychol. 52, 137.

Puustinen, M., Pulkkinen, L., 2001. Models of self-regulated learning: A review. Scand. J. Educ. Res. 45, 269–286.

Ramani, S., Könings, K., Mann, K.V., van der Vleuten, C., 2017. Uncovering the unknown: A grounded theory study exploring the impact of self-awareness on the culture of feedback in residency education. Med. Teach. 39, 1065–1073.

Ramani, S., Könings, K.D., Mann, K.V., Pisarski, E.E., van der Vleuten, C.P., 2018a. About politeness, face, and feedback: exploring resident and faculty perceptions of how institutional feedback culture influences feedback practices. Acad. Med. 93, 1348–1358.

Ramani, S., Könings, K.D., Mann, K.V., Pisarski, E.E., van der Vleuten, C.P., 2018b. About politeness, face, and feedback: exploring resident and faculty perceptions of how institutional feedback culture influences feedback practices. Acad. Med. 93, 1348–1358.

Ramani, S., Krackov, S.K., 2012. Twelve tips for giving feedback effectively in the clinical environment. Med. Teach. 34, 787–791.

Rassbach, C.E., Bogetz, A.L., Orlov, N., McQueen, A., Bhavaraju, V., Mahoney, D., Leibold, C., Blankenburg, R.L., 2019. The Effect of Faculty Coaching on Resident Attitudes, Confidence, and Patient-Rated Communication: A Multi-Institutional Randomized Controlled Trial. Acad. Pediatr. 19, 186–194. https://doi.org/10.1016/j.acap.2018.10.004

Ravik, M., Havnes, A., Bjørk, I.T., 2017a. Defining and comparing learning actions in two simulation modalities: students training on a latex arm and each other's arms. J. Clin. Nurs. 26, 4255–4266.

Ravik, M., Havnes, A., Bjørk, I.T., 2017b. Defining and comparing learning actions in two simulation modalities: students training on a latex arm and each other's arms. J. Clin. Nurs.

Reeve, J., 2002. Self-determination theory applied to educational settings.

Renn, R.W., Fedor, D.B., 2001. Development and field test of a feedback seeking, self-efficacy, and goal setting model of work performance. J. Manag. 27, 563–583.

Ritchie, J., Lewis, J., Nicholls, C.M., Ormston, R., 2013a. Qualitative research practice: A guide for social science students and researchers. sage.

Ritchie, J., Lewis, J., Nicholls, C.M., Ormston, R., 2013b. Qualitative research practice: A guide for social science students and researchers. sage.

Robbins, J.M., Kirmayer, L.J., Cathébras, P., Yaffe, M.J., Dworkind, M., 1994. Physician characteristics and the recognition of depression and anxiety in primary care. Med. Care 795–812.

Robertson, A.C., Fowler, L.C., 2017. Medical Student Perceptions of Learner-Initiated Feedback Using a Mobile Web Application. J. Med. Educ. Curric. Dev. 4, 2382120517746384.

Roland, D., Matheson, D., Coats, T., Martin, G., 2015. A qualitative study of self-evaluation of junior doctor performance: is perceived 'safeness' a more useful metric than confidence and competence? BMJ Open 5, e008521. https://doi.org/10.1136/bmjopen-2015-008521

Ryan, R.M., Deci, E.L., 2000a. Intrinsic and extrinsic motivations: Classic definitions and new directions. Contemp. Educ. Psychol. 25, 54–67.

Ryan, R.M., Deci, E.L., 2000b. Intrinsic and extrinsic motivations: Classic definitions and new directions. Contemp. Educ. Psychol. 25, 54–67.

Sabey, A., Harris, M., 2011. Training in hospitals: what do GP specialist trainees think of workplace-based assessments? Educ. Prim. Care 22, 90–99.

Sargeant, J., Armson, H., Chesluk, B., Dornan, T., Eva, K., Holmboe, E., Lockyer, J., Loney, E., Mann, K., van der Vleuten, C., 2010. The processes and dimensions of informed self-assessment: a conceptual model. Acad. Med. 85, 1212–1220.

Sargeant, J., Eva, K.W., Armson, H., Chesluk, B., Dornan, T., Holmboe, E., Lockyer, J.M., Loney, E., Mann, K.V., van der Vleuten, C.P., 2011. Features of assessment learners use to make informed self-assessments of clinical performance. Med. Educ. 45, 636–647.

Sargeant, J., Mann, K., van der Vleuten, C., Metsemakers, J., 2008. "Directed" self-assessment: Practice and feedback within a social context. J. Contin. Educ. Health Prof. 28, 47–54.

Schein, E.H., 2010. Organizational culture and leadership. John Wiley & Sons.

Schunk, D.H., Pintrich, P.R., Meece, J.L., 2008. Motivation in education: Theory, research, and applications. Upper Saddle River, NJ: Pearson/Merrill Prentice Hall.

Sedikides, C., Strube, M.J., 1997. Self-evaluation: To thine own self be good, to thine own self be sure, to thine own self be true, and to thine own self be better, in: Advances in Experimental Social Psychology. Elsevier, pp. 209–269.

Sender Liberman, A., Liberman, M., Steinert, Y., McLeod, P., Meterissian, S., 2005a. Surgery residents and attending surgeons have different perceptions of feedback. Med. Teach. 27, 470–472. https://doi.org/10.1080/0142590500129183

Sender Liberman, A., Liberman, M., Steinert, Y., McLeod, P., Meterissian, S., 2005b. Surgery residents and attending surgeons have different perceptions of feedback. Med. Teach. 27, 470–472.

Shamdasani, P., Stewart, D., Rook, D., 1990. Focus groups: Theory and practice. Group Dyn. Focus Group Res. Newbury Park Calif Sage Publ. Inc.

Shenton, A.K., 2004. Strategies for ensuring trustworthiness in qualitative research projects. Educ. Inf. 22, 63–75.

Shute, V.J., 2008. Focus on formative feedback. Rev. Educ. Res. 78, 153–189.

Silverman, D., 2011. Interpreting qualitative data: A guide to the principles of qualitative research. SAGE Publications Limited.

Song, S.H., Keller, J.M., 2001. Effectiveness of motivationally adaptive computer-assisted instruction on the dynamic aspects of motivation. Educ. Technol. Res. Dev. 49, 5.

Srinivasan, M., Hauer, K.E., Der-Martirosian, C., Wilkes, M., Gesundheit, N., 2007. Does feedback matter? Practice-based learning for medical students after a multi-institutional clinical performance examination. Med. Educ. 41, 857–865.

Steelman, L.A., Levy, P.E., Snell, A.F., 2004. The feedback environment scale: Construct definition, measurement, and validation. Educ. Psychol. Meas. 64, 165–184.

Stewart, J., O'halloran, C., Barton, J.R., Singleton, S.J., Harrigan, P., Spencer, J., 2000. Clarifying the concepts of confidence and competence to produce appropriate self-evaluation measurement scales. Med. Educ. 34, 903–909.

Strauss, A., Corbin, J., 1998. Basics of qualitative research: Procedures and techniques for developing grounded theory. Thousand Oaks, CA: Sage.

Strauss, A., Corbin, J.M., 1997. Grounded theory in practice. Sage.

Strauss, A.L., 1987. Qualitative analysis for social scientists. Cambridge University Press.

Strauss, A.L., Corbin, J., 1990. Basics of qualitative research (Vol. 15). Newbury Park, CA: Sage.

Suzuki, L.A., Prendes-Lintel, M., Wertlieb, L., Stallings, A., 1999. Exploring multicultural issues using qualitative methods.

Sweller, J., Van Merrienboer, J.J., Paas, F.G., 1998. Cognitive architecture and instructional design. Educ. Psychol. Rev. 10, 251–296.

Talbot, M., 2004. Monkey see, monkey do: a critique of the competency model in graduate medical education. Med. Educ. 38, 587–592.

Tambor, E.S., Chase, G.A., Faden, R.R., Geller, G., Hofman, K.J., Holtzman, N.A., 1993. Improving response rates through incentive and follow-up: the effect on a survey of physicians' knowledge of genetics. Am. J. Public Health 83, 1599–1603.

Telio, S., Ajjawi, R., Regehr, G., 2015. The "educational alliance" as a framework for reconceptualizing feedback in medical education. Acad. Med. 90, 609–614.

ten Cate, O.T.J., 2013. Why receiving feedback collides with self determination. Adv. Health Sci. Educ. 18, 845–849.

ten Cate, O.T.J., Kusurkar, R.A., Williams, G.C., 2011a. How self-determination theory can assist our understanding of the teaching and learning processes in medical education. AMEE guide No. 59. Med. Teach. 33, 961–973.

ten Cate, O.T.J., Kusurkar, R.A., Williams, G.C., 2011b. How self-determination theory can assist our understanding of the teaching and learning processes in medical education. AMEE guide No. 59. Med. Teach. 33, 961–973.

Teunissen, P.W., Bok, H.G., 2013. Believing is seeing: how people's beliefs influence goals, emotions and behaviour. Med. Educ. 47, 1064–1072.

Teunissen, P.W., Stapel, D.A., van der Vleuten, C., Scherpbier, A., Boor, K., Scheele, F., 2009a. Who wants feedback? An investigation of the variables influencing residents' feedback-seeking behavior in relation to night shifts. Acad. Med. 84, 910–917.

Teunissen, P.W., Stapel, D.A., van der Vleuten, C., Scherpbier, A., Boor, K., Scheele, F., 2009b. Who wants feedback? An investigation of the variables influencing residents' feedback-seeking behavior in relation to night shifts. Acad. Med. 84, 910–917.

Teunissen, P.W., Stapel, D.A., van der Vleuten, C., Scherpbier, A., Boor, K., Scheele, F., 2009c. Who wants feedback? An investigation of the variables influencing residents' feedback-seeking behavior in relation to night shifts. Acad. Med. 84, 910–917.

Thorpe, C., Ryan, B., McLean, S., Burt, A., Stewart, M., Brown, J., Reid, G., Harris, S., 2008. How to obtain excellent response rates when surveying physicians. Fam. Pract. 26, 65–68. https://doi.org/10.1093/fampra/cmn097

Thwaites Bee, D., Murdoch-Eaton, D., 2016. Questionnaire design: the good, the bad and the pitfalls. Arch. Dis. Child. - Educ. Pract. Ed. 101, 210–212. https://doi.org/10.1136/archdischild-2015-309450

van de Ridder, J.M., McGaghie, W.C., Stokking, K.M., ten Cate, O.T., 2015. Variables that affect the process and outcome of feedback, relevant for medical training: a meta-review. Med. Educ. 49, 658–673.

Van De Ridder, J.M.M., Stokking, K.M., McGaghie, W.C., Ten Cate, O.T.J., 2008. What is feedback in clinical education?: Feedback in clinical education. Med. Educ. 42, 189–197. https://doi.org/10.1111/j.1365-2923.2007.02973.x

Van Tartwijk, J., Driessen, E.W., 2009. Portfolios for assessment and learning: AMEE Guide no. 45. Med. Teach. 31, 790–801.

Vancouver, J.B., Morrison, E.W., 1995. Feedback inquiry: The effect of source attributes and individual differences. Organ. Behav. Hum. Decis. Process. 62, 276–285.

VandeWalle, D., 2003. A goal orientation model of feedback-seeking behavior. Hum. Resour. Manag. Rev. 13, 581–604. https://doi.org/10.1016/j.hrmr.2003.11.004

VandeWalle, D., 1997. Development and validation of a work domain goal orientation instrument. Educ. Psychol. Meas. 57, 995–1015.

VandeWalle, D., Cummings, L.L., 1997. A test of the influence of goal orientation on the feedback-seeking process. J. Appl. Psychol. 82, 390.

VandeWalle, D., Ganesan, S., Challagalla, G.N., Brown, S.P., 2000a. An integrated model of feedback-seeking behavior: Disposition, context, and cognition. J. Appl. Psychol. 85, 996.

VandeWalle, D., Ganesan, S., Challagalla, G.N., Brown, S.P., 2000b. An integrated model of feedback-seeking behavior: disposition, context, and cognition. J. Appl. Psychol. 85, 996.

Vansteenkiste, M., Lens, W., Deci, E.L., 2006. Intrinsic versus extrinsic goal contents in self-determination theory: Another look at the quality of academic motivation. Educ. Psychol. 41, 19–31.

Varpio, L., Ajjawi, R., Monrouxe, L.V., O'brien, B.C., Rees, C.E., 2017. Shedding the cobra effect: problematising thematic emergence, triangulation, saturation and member checking. Med. Educ. 51, 40–50.

Veloski, J., Boex, J.R., Grasberger, M.J., Evans, A., Wolfson, D.B., 2006. Systematic review of the literature on assessment, feedback and physicians' clinical performance: BEME Guide No. 7. Med. Teach. 28, 117–128.

Vivekananda-Schmidt, P., MacKillop, L., Crossley, J., Wade, W., 2013. Do assessor comments on a multi-source feedback instrument provide learner-centred feedback? Med. Educ. 47, 1080–1088.

Warman, S.M., Laws, E.J., Crowther, E., Baillie, S., 2014. Initiatives to improve feedback culture in the final year of a veterinary program. J. Vet. Med. Educ. 41, 162–171.

Watling, C., 2015. When I say… learning culture. Med. Educ. 49, 556–557.

Watling, C., Driessen, E., van der Vleuten, C.P., Vanstone, M., Lingard, L., 2013a. Music lessons: revealing medicine's learning culture through a comparison with that of music. Med. Educ. 47, 842–850.

Watling, C., Driessen, E., van der Vleuten, C.P., Vanstone, M., Lingard, L., 2013b. Beyond individualism: professional culture and its influence on feedback. Med. Educ. 47, 585–594.

Watling, C., Driessen, E., van der Vleuten, C.P., Vanstone, M., Lingard, L., 2012. Understanding responses to feedback: the potential and limitations of regulatory focus theory. Med. Educ. 46, 593–603.

Watling, C.J., Ginsburg, S., 2019. Assessment, feedback and the alchemy of learning. Med. Educ. 53, 76–85.

Watling, C.J., Lingard, L., 2012. Grounded theory in medical education research: AMEE Guide No. 70. Med. Teach. 34, 850–861.

Weller, J.M., Jolly, B., Misur, M.P., Merry, A.F., Jones, A., Crossley, J.M., Pedersen, K., Smith, K., 2009. Mini-clinical evaluation exercise in anaesthesia training. Br. J. Anaesth. 102, 633–641.

Weston, P.S., Smith, C.A., 2014. The use of mini-CEX in UK foundation training six years following its introduction: lessons still to be learned and the benefit of formal teaching regarding its utility. Med. Teach. 36, 155–163.

Williams, J.R., Miller, C.E., Steelman, L.A., Levy, P.E., 1999. Increasing feedback seeking in public contexts: It takes two (or more) to tango. J. Appl. Psychol. 84, 969.

Winston, K.A., Van der Vleuten, C.P., Scherpbier, A.J., 2010. An investigation into the design and effectiveness of a mandatory cognitive skills programme for at-risk medical students. Med. Teach. 32, 236–243.

Yanagizawa, S., 2008. Effect of goal difficulty and feedback seeking on goal attainment and learning. Jpn. Psychol. Res. 50, 137–144.

Young, P., 2000. "I might as well give up": Self-esteem and mature students' feelings about feedback on assignments. J. Furth. High. Educ. 24, 409–418.

Zimmerman, B.J., 1990. Self-regulated learning and academic achievement: An overview. Educ. Psychol. 25, 3–17.

Zimmerman, B.J., 1989a. Models of self-regulated learning and academic achievement, in: Self-Regulated Learning and Academic Achievement. Springer, pp. 1–25.

Zimmerman, B.J., 1989b. A social cognitive view of self-regulated academic learning. J. Educ. Psychol. 81, 329–339.