Using technology for student feedback: Lecturer perspectives

Thesis submitted in accordance with the requirements of the University of Liverpool for the degree of Doctor of Education by Lydia Jane Arnold

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ABSTRACT

The purpose of this research is to investigate lecturers’ experiences of choosing and using technology for feedback in the context of UK higher education. The study takes a critical realist perspective and utilises a narrative interview methodology. Analysis is undertaken using two complementary approaches. First a connecting strategy explores the themes within each participant’s account, and then a categorising strategy looks at similarities and differences between cases. As a product of the analysis, portraits are created to encapsulate each individual lecturer’s experience. The findings provide a thick description of the deliberations undertaken by lecturers in the formation of feedback practice and in the associated technology selection. Participants come from a range of discipline areas and from five different institutions. They use technologies that incorporate text, audio and audio-visual media. The findings demonstrate that practice is shaped by underlying beliefs about how students use feedback, differing conceptions of academic identity, perspectives of students’ technology expectations, the search for efficiencies, changes in the types of teaching undertaken, professional history, and technological confidence. Individual lecturers are shown to exercise different reflective modes and they mediate the influences on practice in the context of personal priorities. Social networks are shown to be very important in framing feedback and technology related concerns. The practice landscape is shown to be contentious as lecturers hold views about each other’s feedback diligence and technology use. Engagement with technology impacted on lecturers’ perceptions of the quality of feedback being produced. It also triggered some lecturers to reflect on feedback through a different lens and to begin to challenge some of their established practices. The study concludes with recommendations to educational developers and to higher education institutions. More research into the relationship that lecturers have with feedback and technology is recommended.
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CHAPTER 1 INTRODUCTION

Feedback is widely considered to be a powerful learning mechanism (Black & Wiliam, 1998; Hattie & Timperley, 2007; Price, Handley, Millar, & O'Donovan, 2010) as it helps students to assess their own performance and to make appropriate improvements. Nicol, Thomson and Breslin describe feedback as a “troublesome issue in higher education” (2014, p. 102). It is a constant source of concern for students, as well as for teachers and decision makers. Concern mainly focuses on two questions: How can we ensure that feedback is effective? And, how can we make sure that feedback is used? Individual teachers, and institutions of higher education, sometimes turn to technology to provide ‘better’ and quicker feedback on student assessments (see for example: Bourgault, Mundy, & Joshua, 2013; Crook et al., 2012; Stannard, 2008). Research into this emerging practice is predominantly focused on the student experience; less is known about why and how individual teaching practitioners engage with technology for feedback. This study aims to address this point.

Rationale: Practice based motivation

I am an Educational Developer in a small specialist agri-food university, located in the UK, hereafter this will be referred to as Robson University. My work role includes academic staff development, teaching, managing technology enhanced learning projects, curriculum development, and, promoting innovative pedagogy. Land (2001) identified that academic developers serve the needs of different groups, through different means and with a differing degree of priority given to each. I identified with the managerial orientation to educational development, which prioritises serving the needs of the institution. I also have a tendency to act as an internal consultant to meet the needs of colleagues. A further theme within my work is the promotion of reflective practice. It is important to be explicit about these professional tendencies as they shape the concerns that give rise to this research. Particularly, as a consequence of serving different constituencies I am aware of the presence of different stakeholder perspectives on student feedback.
Within Robson University, feedback has been a matter for cross-institutional attention by both the Students’ Union and by Senior Management. Consequentially encouraging ‘good’ feedback practice has become a greater part of my own role in recent years. At a strategic level there has been a growing interest in exploring the potential that technology holds for this purpose (see HAU, 2015). The institution has a modest number of practitioners who use different forms of technology for feedback; they use word processing tools, audiovisual media and specialist assessment management facilities (notably the GradeMark feature of the Turnitin system). Amongst approximately 130 academic staff, it is estimated by the e-learning team at Robson University that around 20%¹ are involved in giving feedback through technology.

With an institutional staff development culture that respects autonomy, the promotion of new pedagogic practices, including the use of technology in feedback, relies heavily on advocacy. In turn this requires a deep understanding of the benefits and challenges of different tools and an understanding of the nuances of the practice landscape. It is from this position that my personal motivation for this research began. I wanted to better understand the practice with which I was increasingly involved. My aspiration to be better informed does not imply an uncritical acceptance of technology.

Through earlier research within my doctoral studies, I became more empathetic to some of the challenges that teaching staff experienced when developing their practice. I recognised the contextual complexity in which practice was formed, as well as the emotional transitions that teachers undertook as practice changed. This research is guided by the search for knowledge but also by the potential to generate an appreciation of different perspectives. The idea that research can promote empathy is recognised in the concept of empathetic validity, which is “the potential of the research in its processes and outcomes to transform the emotional dispositions of people towards each other, such that more positive feelings are created between them” (Dadds, 2008 p. 208).

¹ This estimation was based on information held by the e-learning team in November 2013
Rationale: Contribution to knowledge

Despite its pedagogic power, feedback remains an Achilles heel in student satisfaction across the higher education sector. Students repeatedly indicate lower levels of satisfaction with feedback that with any other aspect of their student experience (see HEFCE, 2013). At the same time, feedback is also a significant source of workload pressure for lecturers (Norton, Norton, & Sadler, 2012). Teaching staff increasingly face institutional pressure to improve student satisfaction with feedback (as reflected by Soosay, 2011).

Despite the great importance of feedback, literature tends to focus on student rather than lecturer perspectives (Evans, 2013). If feedback is a partnership, as Nicol suggests that it is (2010), then the outlook of each partner should be understood for completeness. Particularly, if lecturers are to be effectively supported then more needs to be known about their experience and concerns.

A lack of explicit consideration of teacher perspectives is also recognisable in the literature relating to technology for feedback; research tends to focus on the benefits and limitations of particular technologies for students. This research seeks to make a direct contribution to addressing this gap by exploring the experiences of lecturers who use technology in the provision of student feedback.

Purpose

The primary purpose of the study is to inform academic development practice and institutional decision-making in my own organisation and beyond. As higher education institutions consider how technology can assist the provision of feedback, there is limited evidence on which decisions can be made. More understanding of the reality of technology based feedback practices could inform the formulation of organisational approaches to this issue.

The study will make a modest contribution to current national discussion about technology’s use in student feedback. The study is small scale, and in no way aspires to influence national policy, but it may begin to draw attention to teachers’ voices in a discourse dominated by a student focus.
Thesis structure

The thesis is organised as an evolving journey. Chapter 2 begins by reviewing the concept of feedback and in so doing sets some parameters for the study. It then considers the true complexity of the feedback challenge faced within higher education, predominantly in the UK but with reference to other national contexts, and it explores what is specifically known about lecturer perspectives on student feedback and technology use. The chapter reviews how tutors are currently employing technology to assist with feedback and it offers a fuller critique of the existing literature in this area. It concludes by recognising gaps in our knowledge of this area of practice and by articulating three research questions.

Chapter 3 articulates the theoretical framework for the research. It justifies the choice of a critical realist approach with respect to my own worldview and the nature of the research problem. Margret Archer’s (1995; 2003; 2007) work relating to the internal conversation and morphogenesis is presented as a bridge between the ‘bigger picture’ concepts of critical realism and the more focused research questions. Archer’s ideas are used to inform a framework which is generated to identify where the research should look for answers. Archer’s work is also cited in subsequent chapters to bring further clarity to aspects of lecturer experiences and interactions.

Chapter 4 outlines the research design. It justifies the use of a narrative interview method as a means to get to the heart of lecturers’ experiences and it explains the rationale for using both connecting and categorising strategies in the analysis. The chapter identifies some of the ethical dilemmas faced in the research execution and shows some of the tensions associated with researching one’s own workplace.

Chapter 5 shares findings from Robson University and discusses their relevance. Chapter 6 shows findings from interviews conducted beyond my home institution, again with interwoven discussion. Separating the external and internal cases supports the development of a deep understanding of context. This is important in critical realism, which is underpinned by the idea
that causes and relationships can only be understood in context (Maxwell, 2012a).

Chapter 7 synthesises the main findings from the internal and external cases and draws recommendations for educational developers and for higher education institutions, as well as for further research. The focus of these recommendations fits with the stated aspirations of the research to influence personal and institutional practice as well as to open out the discourse.

**Terminology**

Throughout the study the terms lecturer, teacher, tutor or faculty member are all used interchangeably to describe higher education staff who have a major role in teaching or facilitating learning. The term ‘practice’ is used to note the practice of technology enabled feedback, unless otherwise indicated. The term ‘formal feedback’ is used in respect of feedback that is a planned part of the student-learning journey; this concept is defined fully within Chapter 2.
CHAPTER 2 LITERATURE REVIEW

This chapter presents a review of literature to inform the development of the research questions and to provide the backdrop for the discussion of findings. It introduces the sprawling concept of feedback in higher education and locates the type of feedback that will be considered within the study. The chapter then reports on widely experienced challenges in this area of academic practice and the idea that technology might help is considered. Given the limited literature relating specifically to feedback through technology, the review focuses on two constituent areas: i) lecturer experiences and perceptions of feedback practices, and ii) lecturer experiences and perceptions of learning technologies. A gap in the literature is highlighted in relation to lecturers’ experiences of generating feedback using digital tools, and in relation to lecturers’ experiences of giving feedback more broadly. The need for a wider constituency of lecturer voices in the literature around both technology and feedback is offered as an important factor in the rationale for the study. Areas where new research could make a contribution to knowledge are located with reference to gaps in the current discourse. The chapter concludes with the initial formulation of the research questions. These questions undergo a minor revision in chapter 3 when they are re-considered alongside the adopted epistemology.

What is feedback?

“There is no generally agreed definition of assessment, and few studies have systematically investigated the meaning of assessment feedback” (Evans, 2013 p.71). Feedback is central to learning and “at the heart of pedagogy” (Black & Wiliam, 1998 p. 16) yet it is a term that “does not have clarity of meaning” (Price et al., 2010 p. 278), instead meaning is largely assumed to be implicit (Scott, 2014). Given this opacity it is necessary to explore what is meant by the concept and to form an operational definition for the study.

In a seminal paper Black and Wiliam (1998 p.53) describe feedback “in its least restrictive sense …[as] any information that is provided to the performer of any action about that performance”. They recognise the role of the teacher, but note the benefit of peer and self-reflective feedback. Hattie and Timperley
(2007 p. 81) add that the source of the feedback information can include “teacher, peer, book, self, [and] experience”.

Ellery (2008) maintains that the primary purpose of feedback should be to bridge the gap between what is understood and what needs to be understood. This requires reference points to make clear the expectations of the performance; these reference points may be culturally embedded in the academic community (Bitchener, Basturkmen, & East, 2010). Hounsell (2003 in Tang & Harrison, 2011) emphasises feedback as something that influences and accelerates learning, though Black & Wiliam (1998) stress that feedback can improve performance only in certain conditions, for example when feedback is timed to give sufficient opportunity to implement improvements.

Sadler (1998) noted that feedback can differ in its emphasis e.g. on accuracy or content, and in its communicative features e.g. its motivational tone. Fernández-Toro, Truman, and Walker (2013) observed disciplinary variances; in their study, feedback in the context of language assessment emphasised the development of skills whilst in disciplines related to technology, feedback was more centred around content. Feedback can be corrective, as in righting grammar or a mathematical calculation, or it could be questioning, prompting the recipient to think deeper about an aspect of their performance. It might describe a performance or evaluate it (Sadler, 1998).

Hattie & Timperley (2007) recognise that feedback “is a “consequence” of action” – it is reactive. At the same time feedback is often imagined as a pro-active function that can improve a learner’s next steps. To recognise this future looking approach the term feed-forwards is sometimes used (e.g. Duncan, 2007; Tong, 2011; Vardi, 2013).

Feedback can be conceptualised as a continuing cycle rather than as a series of discrete events (Barker & Pinard, 2014; Beaumont, O'Doherty, & Shannon, 2011; Cramp, 2011). This cycle is inherently linked to the notion of a learning journey, as an individual can continually adjust and moderate their performance in response to feedback (Dowden, Pittaway, Yost, & McCarthy, 2013). Kahu (2008) notes the informal and formal processes of feedback in higher education; the former is likely to include spontaneous remarks, and the
latter incorporates more systematic and pre-planned approaches.

Feedback can be seen as an active two-way process (Black & Wiliam, 1998; Cartney, 2010; Cramp, 2011; Evans, 2013). Nicol (2010) claims that the quality of student engagement with feedback is possibly more significant to further learning than the quality of the actual feedback. Students may not always be prepared for this engagement as they may have had limited prior training on how to actually use feedback (Robinson, Pope, & Holyoak, 2013). While partnership is held up as the ideal, lecturers are sometimes skeptical that students are willing partners (this point is explored in more detail later in this chapter).

Feedback is an emotional business. It can stir an emotional response in the recipient (Cramp, 2011; Dowden et al., 2013; Harrison, Könings, Schuwirth, Wass, & Vleuten, 2014; Pekrun, Cusack, Murayama, Elliot, & Thomas, 2014; Poulos & Mahony, 2008) and in turn this can impact the recipient’s ability to engage productively with the message of the feedback (Boud & Falchikov, 2007). Feedback and emotion are undoubtedly intertwined but they remain under-researched (Hounsell, 2007; Pekrun et al., 2014). Higgins, Hartley and Skelton (2001) argue that feedback should be treated as a more holistic process that recognises the role of individual lecturer and student identity. They propose foregrounding the deeper values and emotions of the agents involved in the process. No literature pertaining to lecturer emotions was located.

Feedback can be conceived in relation to the emerging market environment of higher education. Data relating to student perceptions of feedback features in public data sets for all UK higher education institutions (HEFCE, 2013). Moreover students have been reported as seeing feedback as part of the service that they pay for (Higgins, Hartley, & Skelton, 2002). More recently, in a think piece within the professional press, Furedi (2009) suggests that as students become more like consumers there is likely to be a fundamental shift in the role of assessment feedback from critique to flattery. The association of feedback and fees is not fully understood though. Bates and Kaye (2014) engaged fifty-six students in focus groups to establish the extent to which changing student expectations can be explained by substantially increased
fees; they were surprised that feedback was not one of the areas of changed expectation highlighted by students. The absence of ‘feedback’ amongst the student concerns must be viewed critically though, since Ramsden (2008) suggests that students tend to have limited perceptions of what to expect at university. Ramsden (2008, p.3) also warns that “there is a risk of creating a self-fulfilling prophecy” about the consumer mindset of students. It is clear that feedback is linked by some to fee concerns, however more research is needed to understand this.

The national discourse around feedback in the UK is steeped in the language of rights and responsibilities. The QAA (2011) refer to student feedback entitlements, while universities explicitly set out their own expectations of both staff and students in relation to feedback. Students’ expectations around feedback are being messaged strongly by their unions; pro-active campaigns for high quality feedback are occurring on university campuses across the UK (see for example NUS, 2011; NUS, n.d.). Scott (2014) posits that student expectations of feedback may be shaped by a generational mind-set, which is conditioned by internet-enabled instant responses on many aspects of life.

**An operational definition of feedback**

Fusing Black and Wiliam (1998) and Ellery’s (2008) definitions, feedback can be conceived as information on performance, which has the aim of generating improvement. While feedback is an on-going and barely separable function within learning and teaching, the practice based motivation for this study, explored in Chapter 1, places the primary concern of this inquiry with the type of feedback that is part of the formal assessment process. A formative or summative demarcation does not capture this, since some tutors might deliberately plan to give more formative and less summative feedback in support of a formal piece of assessment. Adopting Kahu’s (2008) formal/informal boundary offers a helpful dividing line for this study; feedback that is in the moment shall not be considered, whereas feedback that is scheduled shall be. Additionally, the feedback within this study shall relate to a piece of formal assessment or a constituent component i.e. it must generate a contribution to the final outcome of a unit of work or module.

The type of performance that is encompassed within the formal assessment
diet of UK higher education students is hugely varied and may incorporate tasks as varied as essays, presentations, web-folios, reports, portfolios, reflective diaries and posters. It is not known whether lecturers opt for the use of technology in some types of performance over others. Furthermore it is not known whether lecturers design their assessment with technology-based approaches to feedback in mind. Excluding one or another type of performance, with the exception of examinations, would limit the study without a sound basis for doing so. Finally, this study shall focus on feedback from lecturers only, it will not cover self-review or peer feedback.

One of the limitations of this discussion is that it has not considered cultural differences in feedback. To do so is beyond the scope of this study, but it is important to acknowledge that conceptions of feedback are culturally rooted (Chen, May, Klenowski, & Kettle, 2014) and the range of views expressed within this review emerge only from an Anglophone perspective.

**The feedback challenge**

The importance of feedback for student learning is widely accepted (Price, O'Donovan, & Rust, 2007). Hattie’s (1987) claim, reinforced twenty years on by Hattie & Timperley (2007), and also by Rust (2002), that feedback is the single most powerful influence on student learning is extensively cited (see for example Crook et al., 2012; Dowden et al., 2013; Hyland, 2013; Mathisen, 2012). The claim has maintained authority in both research and practice. Despite this, lecturers are sometimes skeptical about whether students are prepared to, and able to, engage with their feedback (Price et al., 2010). While students call for high standards in feedback (NUS, 2011), some tutors sense that students fail to engage with it (Glover & Brown, 2006; Scott, 2014). Reasons why students may not appear to engage with their feedback include that it may be simply unhelpful, too limited, unreadable, too general or steeped in language that is impenetrable (Higgins et al., 2002), or it may be unusable in the context of new assessment tasks (Vardi, 2013). Price et al. (2010) observed that lecturers live with constant contradiction between students’ espoused views of feedback, which claim feedback to be hugely important, and students’ actual use of feedback, which is not always obviously
productive. Price et al. (ibid.) suggest that lecturers rarely step back and ask whether this incongruity has underlying causes.

Some procedural features of feedback are widely accepted as good practice. These include ensuring feedback is legible, timely, constructive, accessible and understandable (Ball, 2009; Bols & Wicklow, 2013; Kahu, 2008; Nicol, 2010; Scott, 2014). Nicol summarises a view which is dominant in the literature: “Feedback should be of sufficient quantity; timely; it should focus on learning not marks; it should be related to assessment criteria and be understandable, attended to and actually used by students to make improvements on their work” (2009 p. 337).

Despite how much we know about feedback, our ability to maximise its benefits remains a persistent challenge (Beaumont et al., 2011; Price et al., 2010). Students are consistently dissatisfied (Price, Carroll, O'Donovan, & Rust, 2011). Feedback is recurrently noted as the weakest area in students’ perceptions of their university experience (HEFCE, 2013) and the Quality Assurance Agency (QAA) review of institutional audits recognised feedback as being inconsistent and often insufficient (QAA, 2008). QAA also noted a gap between policy and practice on feedback within institutions (QAA, 2011), while individual institutional surveys have revealed feedback dissatisfaction amongst students (Hunter & Hill, 2011; Maggs, 2014). The UK’s students are not alone in experiencing a lack of satisfaction with feedback; this is a problem for higher education across the globe (Hounsell, 2007; Hyland, 2013; Nicol, 2010).

Lecturers face resource challenges in relation to feedback (Mathisen, 2012; Price et al., 2010; Scott, 2014). Gibbs and Simpson (2005) describe how resource pressures have reduced the quality and quantity of feedback received by students at a time when increased diversity in the student population means that this feedback is more essential than ever. Resource pressures limit the opportunity for dialogue around feedback (Cramp, 2011; Jones, Georgiades, & Gunson, 2012; Nicol, 2010). This is a loss since student-tutor feedback dialogue is considered an incredibly powerful activity for learning (Blair & McGinty, 2013; Dowden et al., 2013; Nicol, 2010)
particularly in the early part of a student’s journey (Cramp, 2011). Now “written feedback, which is essentially a monologue, is now having to carry much of the burden of teacher–student interaction” (Nicol, 2010 p. 503). Widespread expansion of student numbers has also limited the opportunity to personalise feedback, as lecturers simply don’t have time to offer customised feedback to their many students (Vardi, 2013).

**Responses to the feedback challenge**

Higher education institutions and individual teachers have taken action to both improve the quality of feedback commentary (see for example Ball, 2009) and to support students in their use of feedback (see for example Blair & McGinty, 2013; Cartney, 2010; Duncan, 2007; Parkin, Heplestone, Holden, Irwin, & Thorpe, 2012). Perhaps as a consequence of such redoubled efforts, lecturers increasingly believe feedback to be high quality, despite the enduring student view to the contrary (Robinson, Pope, & Holyoak, 2013). However, it is important to be aware that initiatives in response to student discontent can simply “provide more of the same type of feedback [and can] lead to greater dissatisfaction” (Price et al., 2011, p. 482). Nicol, Thomson and Breslin (2014, p.103) describe how the sector’s efforts to enhance feedback through “well-meaning” interventions have been “disappointing” with an increase in workload but no impact on either learning or satisfaction. Price et al. (2013) recognise the futility of changes made to improve feedback, adding that the deep and interconnected nature of feedback requires a more holistic agenda for change.

The feedback challenge cannot be viewed in isolation as there is an inherent connection between effective feedback and course design: “If assessment suffers from being an afterthought in the course design process, feedback is distanced even further, rarely being considered in a strategic way” (Price et al., 2011 p. 482). Higgins et al. (2002) concur, suggesting that modularity constrains the usefulness of feedback given by tutors. Curriculum design in UK higher education has evolved to support large numbers of students; the modularity of programmes means that feedback is often emphasised at the end of the unit, and therefore may not be useful (Parkin et al., 2012). In light of this, the feedback challenge is sometimes associated with the need to re-
Imagine curriculum and assessment strategies. The JISC Viewpoints project (Sheppard, 2013) is an example of a recent intervention that sought to advocate meticulous and systematic planning of assessment and feedback within the context of the whole student journey.

**Technology as part of the solution**

This review now moves to consider how technology is currently being used in feedback. Lunt and Curren (2010) identify that the dominant hand-written feedback culture is no longer appropriate to cope with high numbers of students, adding that technology could be a powerful part of a teacher’s response to the feedback challenge. Tong (2011) describes his own confidence in the potential of technology for enabling feed-forward and for enabling known ‘good feedback’ principles to be fulfilled.

**Principles and practice of digital feedback**

Electronic forms of feedback are being utilised in different national contexts, examples can be found in the UK, Norway and Australia (see Debuse, Lawley, & Shibl, 2008; Mathisen, 2012; Peacock, Scott, Murray, & Morss, 2012). The use of technology in feedback is not new. Fitzgerald (2011) highlights examples of audio feedback from 2001, but overall universities have been slow to exploit this technology (Lunt & Curran, 2010). Technologies that have existed for some time are still being regarded as novel in a feedback context (see Maggs, 2014; Parr, 2013).

Lumadue and Fish (2010) note that some media-rich technologies might trigger a paradigm shift in feedback, by creating efficiencies for teachers and a more engaging medium for students. However, in light of the earlier discussion about the structural and complex nature of feedback, there is insufficient evidence within Lumadue and Fish’s work to show that technologies alone hold the power to revolutionise the feedback landscape. Nevertheless, their enthusiastic portrayal of the untapped potential of technology does raise further questions about why teachers engage with this technology and what the benefits might be.
Literature reveals that lecturers engage with digital approaches to feedback in an effort to: create efficiencies (Debuse et al., 2008); raise the standard of feedback through, for example, increased clarity of meaning; and to add variety to the student’s feedback diet (Fitzgerald, 2011; Mathisen, 2012). The benefits and challenges of technology for use in feedback vary according to the technology employed and the circumstances in which they are used. The importance of context was evident in Fitzgerald’s (2011) study, which notes that producing high quality audio feedback in the context of large groups was especially challenging in terms of the time it took. Table 2.1 below exemplifies some advantages and disadvantages of different technology enabled feedback approaches.

**Table 2.1 Benefits and challenges of different feedback technologies**

<table>
<thead>
<tr>
<th>Technology</th>
<th>Perceived benefits</th>
<th>Perceived challenges</th>
</tr>
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<tbody>
<tr>
<td>Audio</td>
<td>Low-budget and little equipment needed (McCullagh, 2010); Sense of personalised feedback possible (Fernández-Toro, 2012; McCullagh, 2010); Positively received by students (Brookes, 2010; Chew, 2014; Hennessy &amp; Forrester, 2014); Can be efficient (Brookes, 2010); Increased retention of feedback content by students (Ice, Curtis, Phillips, &amp; Wells, 2007); Sense by students that tutors care (Hennessy &amp; Forrester, 2014; Ice et al., 2007); Higher student satisfaction with feedback (Voelkel &amp; Mello, 2014); Increased volume of feedback possible without a resource increase (Ice et al., 2007; McCullagh, 2010); Can be listened to from anywhere (Lunt &amp; Curran, 2010); Can encourage teachers to elaborate and give additional detail (McCullagh, 2010).</td>
<td>Audio may seem disconnected from the visual aspects of assessment work (Fitzgerald, 2011); Differing ability of students to download podcasts (Brookes, 2010); Challenging to maintain the quality across a large group (Fitzgerald, 2011); Not easy to “skim-listen” (McCullagh, 2010) although this same point was deemed a potential advantage too (Cann, 2014); Hard to deliver difficult feedback messages (Voelkel &amp; Mello, 2014); May prove technically challenging to some teaching staff (Cann, 2014).</td>
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<tr>
<td>Audio visual</td>
<td>Dual coding helps student engagement (Mathisen, 2012); Efficient to create (Jones et al., 2012; Hope, 2011); Allows supportive resources to be signposted and explained (Jones et al., 2012); Engaging for students, bringing about deeper feedback engagement (Hope, 2011)</td>
<td>Transmission based rather than dialogical (Jones et al., 2012); Can be time consuming for the tutor (Haxton &amp; McGarvey, 2011)</td>
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<tr>
<td>Text based</td>
<td>Legibility improvement; Efficient where pre-prepared comment banks are used (Buckley &amp; Cowap, 2013; Heinrich &amp; Milne, 2012); When retained the opportunity for dialogue is greater – a permanent record can provide the basis for discussion (Parkin et al., 2012); Feedback volume may be increased (Heinrich &amp; Milne, 2012).</td>
<td>Concern for time spent on-screen (Maggs, 2014; Spencer, 2006); Rigid interfaces can act as a deterrent for tutors (Burrows &amp; Shortis, 2011; Spencer, 2006) and students (Stone, 2014); High cognitive load on markers (Johnson &amp; Greatorex, 2008); Fails to encourage dialogue (Stone, 2014).</td>
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<tr>
<td>Rubrics</td>
<td>Efficiencies in calculating grades and offering feedback (Atkinson &amp; Siew, 2013; Nordrum, Evans, &amp; Gustafsson, 2013); Consistency of judgment and can be used to generate statistics about mark distribution (Atkinson &amp; Siew, 2013; Nordrum et al., 2013).</td>
<td>Can be associated with low levels of personalisation; Efficiencies can require significant set-up; Favours lecturers who have existing criteria based marking (Atkinson &amp; Siew, 2013; Nordrum et al., 2013).</td>
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<tr>
<td>Video</td>
<td>Can be replayed to establish clarity; helps students absorb more feedback; Reusable video clips allows for demonstrations as a correctional mechanism; Tendency for a greater volume of feedback (Crook et al., 2012).</td>
<td>Can be time intensive to create and download; Generic videos can feel impersonal (Crook et al., 2012).</td>
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**The call for criticality and representation**

After a meta-review of the assessment landscape, Li and De Luca (2014) identify that more research is required into the role that technology can play in providing feedback. Studies relating to the use of technology in feedback, that were located through library database searches as well as web searches, fell in to four categories:
• Practitioner evaluation of small scale use of technology for feedback (for example: Brookes, 2010; Cann, 2014; Crook et al., 2012; Fitzgerald, 2011; Hennessy & Forrester, 2014; Haxton & McGarvey, 2011; Lunt & Curran, 2010; Voelkel & Mello, 2014; Watkins et al., 2014).

• Evaluation of feedback technologies specifically for distance learners (Ice et al., 2007);

• Evaluation of institutional adoption of assessment and feedback technologies (Ellis & Reynolds, 2013);

Comparisons of the student experience for different types of feedback (Bourgault et al., 2013; Chew, 2014).

The literature search for publications relating to lecturer use of technology in feedback included terms that related to “learning technology”, specific technologies (e.g. “audio”, “screencast” with “feedback”), “assessment feedback”, “lecturer experiences of technology”, and “attitudes to feedback technology in higher education”. Moreover when it became apparent that a limited range of studies were available and that the findings had a bias towards practitioner studies, the search was broadened to actively seek out critical studies by using terms such as “feedback technology challenges” and “feedback technology critique”. The process of finding literature did not solely focus on tools, but on attitudes and experiences relating to both technology and feedback. Discussion within my own professional networks with other educational developers and higher education colleagues, who had an interest in feedback, provided an additional safeguard to ensure that my search for a wider range of literature was thorough. The dominance of practitioner studies about specific tools is therefore thought to reflect the balance of the discourse rather than a specific bias in the literature search process.

The conclusion claiming that literature relating to technology and feedback is dominated by enthusiastic practitioners resonates with the work of Clapham (2013) and Hanson (2009). In his doctoral thesis Clapham (2012) suggests that research relating to technology can romanticize experiences; according to Hanson (2009) this can be as a result of self-selected ‘champion’ practitioners undertaking the research. The need to seek out critical voices in the literature
is important to avoid a distortion of the discourse, particularly to prevent both a conflation of the benefits of technology and a sense that particular ‘hi-tech’ practices may be more widespread than in reality. Moreover a failure to represent a wider group of lecturer experiences could be associated with othering by absence, since Todorov (1984 cited in Krumer-Nevo and Sidi, 2012) associates othering with how much is known about a particular group.

As well as the gaps in literature that are significant on the grounds of representation, there are also gaps based on the lack of critical voices about the technology use. Mathisen (2012) argues for a critical approach to investigating technology use in feedback. He encourages us to take a step back from the technological optimism evident in much of the current research and to assess why technology is being used. Similarly Lunt and Curran (2010, p.755) note the risk of ‘hype’; they question whether a “halo effect” of new technology is causing disproportionate enthusiasm because it offers some relief to the persistent problem of feedback. There is a further danger of benefit conflation in the way that data for evaluative studies is collected; despite espousing positive views about technology within the context of research, teachers don’t always utilise them (Shelton, 2014).

Clapham (2012) recommends a more critical look at learning technology, particularly through a consideration of the reality of teacher experiences. Kregor et al. (2012) find frustration amongst lecturers who see the student centred philosophy of learning technology as being sometimes at their own expense; capturing these voices is especially important to gain a full and honest appraisal of this emerging area of practice.

Amongst the literature on technology for feedback, the experience of lecturers appears to be less well represented than the experience of students. There is a tendency to evaluate tools, rather than focusing on the more holistic experience of technology use. Moreover, where benefits are observed it is often unclear whether these are as a direct consequence of the technology or, if instead a change has taken place within the lecturer’s attitude to feedback as a consequence of engaging with a new approach. Crook et al. (2012) and
also Watkins et al. (2014) describe a change that occurs within lecturers when moving to technology based feedback approaches. Watkins et al. (ibid.) recognise that technology can be a trigger for lecturers to re-examine their practice, and to engage students in dialogue so to inform their own understanding of what constitutes good feedback. Their research was based around a survey of over 250 student experiences of GradeMark feedback, however the observations related to the lecturer perspective reflect their own experience of personal change. Whether such changes would be evident amongst a wider pool of lecturers is not clear.

**Lecturers, feedback and technology**

Given the scarcity of literature relating directly to lecturer use of technology enabled feedback, this review transfers attention to the two component parts: First, it examines how lecturers are represented within the literature on feedback per se, and then second how lecturers are represented in studies relating to the use of teaching and learning technologies.

**Lecturers’ experiences of feedback**

According to Evans’s (2013) meta-study on assessment feedback literature, research on lecturers’ relationships with feedback is limited. Evans reviewed 460 papers on feedback from a twelve-year period and only 7.1% had an exclusive focus on the lecturer perspective, compared to 57% that were solely student focused. Evans (ibid.) observed that around one third of literature she explored contained the perspectives of staff and students. Within this sub-set, Evans does not indicate whether there is a predominance of one or the other voice, but in my own experience of reviewing literature on feedback I have observed a tendency for the predominant perspective to be student centred, with a more minor reflection of the practitioner researcher offering a personal perspective on their own experience to represent a lecturer view. For example, this was shown to be the case with Watkins et al. (2014) and Higgins, Hartley and Skelton (2002); these papers are further explored later in this chapter. Evans is not alone in making observations about faculty underrepresentation: the same point is made by Bailey & Garner (2010), ; Li & De Luca (2014) and Topping (2010). The limited coverage of lecturer perspectives exists despite claims that a greater understanding of tutor
perceptions of feedback is needed to improve lecturer development in this area (Tang & Harrison, 2011) and to bring about changes to feedback practice (McDowell, White, & Davis, 2004). More research in to lecturer experiences could then serve improvement, and ensure completeness of coverage.

According to Ellery (2008), lecturer approaches to feedback can be viewed as an extension of one’s pedagogic beliefs about the learning process, for example behaviourist foundations lead to an emphasis on summative and norm referenced approaches and constructivist approaches lead to a more personalised approach. McDowell, White and Davis (2004) suggest that changing one’s feedback practice cuts much deeper than using new approaches, but rather involves deeper conceptual shifts in pedagogic outlook. Whether there are any such pedagogic shifts associated with the use of technology for feedback remains unknown.

Watling et al. (2013) conducted focus groups and interviews with fifty students in three discipline areas and found that feedback which is associated with particular professional fields, explicitly medicine, music or teacher education, is most effective when it complements the specialised context and cultures of the related occupation. Creating a good fit with the professions occurs through having credible voices giving feedback and by ensuring feedback is situated. Building on this work, Harrison et al. (2014, p. 1) interview seventeen students, all from a medical background, and argue that “[s]ocio-cultural influences and barriers to feedback need to be understood before attempting to provide feedback after all assessments”. Both of these studies focused on the student view; the extent to which teachers actively fashion feedback to complement professional cultures is unknown. Both papers cited here call for more research in this area.

Higgins, Hartley and Skelton (2002) undertook research to explore student perceptions of feedback; they conducted nineteen interviews and considered responses to ninety-four questionnaires. When they located feedback dissatisfaction amongst the student respondents the authors reflected upon
the reasons for differences in experience. In their deliberations they recognised four different feedback approaches amongst lecturers:

1. A concentration on suggesting revisions;

2. A concentration on justifying the grade via evaluative remarks;

3. Provision of limited feedback because of doubts about students’ receptiveness;

4. Provision of limited feedback for students who reached an acceptable level of performance, as it is thought superfluous.

Higgins, Hartley and Skelton were not clear how individual lecturers came to hold these views and it is unclear whether these categories are contextually or temporally fixed or variable. Tang and Harrison (2011, p. 585) respectfully point out that “[Higgins, Hartley, and Skelton’s categories] were speculation, and empirical research is needed to probe tutor perceptions on roles of feedback in a more systematic manner”. While Higgins, Hartley and Skelton’s typology lacks rigorous evidence it does evoke the question of whether or not there are feedback orientations or attitudinal predispositions amongst lecturers.

The appendage of teachers’ voices to Higgins, Hartley, and Skelton’s (2002) paper and the research of Watling et al. (2014) typifies the limited recognition of faculty in feedback discourse. Tang and Harrison (2011) provide one of the few dedicated investigations of teacher perceptions of feedback. They use survey data, from over fifty teachers who support a university English course, along with eight follow-up interviews. Their work identified three different categories of feedback outlook, shown at Box 2.1. Each category embodies distinct pedagogic beliefs. As well as areas of difference Tang and Harrison observed some commonality in beliefs specifically in relation to the value of corrective feedback. Tang and Harrison’s (2011) categories were formed from a relatively small sample in one subject area, and therefore cannot be assumed to be totally transferable.
Box 2.1 A summary of Tang and Harrison's (2011) categories of feedback approach

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<th>Traditional–autonomous–global (TAG), wherein:</th>
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<td>i.</td>
<td>tutors have a limited confidence that students use feedback</td>
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<td></td>
<td>tutors do not engage with colleagues on feedback</td>
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<td></td>
<td>tend to feedback on higher order ideas rather than minutiae.</td>
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<th>student-centred (SC), wherein:</th>
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<td>ii.</td>
<td>tutors believe that good tutor feedback guides improvement</td>
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<tr>
<td></td>
<td>tutors believe all students needed tutor feedback</td>
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<td></td>
<td>tutors offer suggestions for the development of assignments.</td>
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<th></th>
<th>traditional-local (TL), wherein:</th>
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<tr>
<td>iii.</td>
<td>tutors have limited confidence that students use feedback</td>
</tr>
<tr>
<td></td>
<td>tutors tend to feedback on detailed points relating to report structure and use of language</td>
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</table>

Hyland (2013) also identified diverse lecturer beliefs around feedback. He observed that some lecturers have limited confidence that students use feedback, while others believe it is a powerful learning trigger. He noted that the power of feedback is considered variable, and dependent on student use. He also reports differences in emphasis between feedback content, style and structure, but he did not explain what might underpin these. Hyland’s study was based upon twenty interviews. Participants were teachers in an English speaking university in Hong Kong, specifically the teachers in the study were teaching academic writing to those whose first language was not English. Although the context is very specific and the transferability of these ideas is not assumed, Hyland’s work does draw further attention to the existence of differences in feedback perceptions and tendencies. Like Tang and Harrison’s (2011) work, the focus is on espoused beliefs rather than enacted practices.

Very limited literature was found to relate an individual’s feedback beliefs to their feedback actions. Through deep reflection on his experience of training new teachers, and using case examples, Hewitt (2010) identifies the
importance of internal factors in determining the feedback approaches adopted by new teachers in the classroom. While Hewitt’s work is concerned with feedback of a type that is outside of the scope of this research (he is concerned with spontaneous feedback in school classrooms), his identification of the internal deliberative processes associated with feedback choice is significant. He describes feedback strategies as being available to teachers and notes that more mature practitioners come to distinguish which strategies to adopt and when. Using Wheeler’s (1998 cited in Hewitt, 2010) metaphor of a kitbag of teaching tools and methods, Hewitt argues that individual values and beliefs will ultimately inform and shape which strategy is pulled from the bag at any one time. Hence, he sees the teaching kitbag something that is not independent from self, but rather something that must be negotiated within each individual.

Bailey and Garner (2010) begin to describe the process of moving from feedback strategies and beliefs to feedback actions. They describe how lecturer choices about feedback are a product of the relationship between an individual’s pedagogic beliefs and the institutional policy on feedback. Through a process of decision-making, lecturers evaluate the constraints of the policy framework that they are operating in, and the potential benefits of actions in this context.

Extending the idea that feedback is a product of self and context, Price, Carroll, O’Donovan and Rust (2011) shed some more light on the situated factors that could interact with individual values in the development of practice. Their meta-study revealed that “[assessment] culture is supported or destroyed by the institution’s ‘cultural web’ (Johnson and Scholes 2002), [which involves] leadership commitment, power and organisational structures, control systems, as well as a powerful underbelly of informal stories, symbols, rituals and routines often hidden ‘beneath the waterline’ of formal policies and processes” (2011 p. 488). Precisely how these variables play out to generate practitioner decisions is unknown. This generates yet more questions, including: Are some influences more important than others? What happens beneath the waterline that might influence feedback practice?
Summary of lecturer’s perspectives on feedback

After a consideration of literature around the lecturer perspective of feedback it is clear that:

i. The lecturer perspective on feedback is explored much less than the student view;

ii. Research on lecturers’ use of tools for feedback is largely the domain of enthusiastic practitioners; there is a lack of representation of other voices and a lack of critical perspectives in the literature base.

iii. A range of influences may be at work in shaping feedback perspectives of lecturer, these include: the organisational context, culture and leadership; the policy environment with respect to feedback; personal values; and discipline based factors;

iv. How this range of influences, and possibly other factors not identified here, combine in the decision making process and experiences of lecturer is unclear. All of the literature cited focuses on one or more component influences, but none reflect all of the factors as an inter-related whole;

v. There is a tendency in the research to focus on espoused theory rather than theory in action; the possibility of a gap must not be discounted;

vi. In the area of feedback, Hewitt concludes, “the “why choose this rather than that?” is as important as the awareness that there exists a “this” and “that”” (2010 p.284). It appears in the literature that we only have a partial view of how lecturers reach decisions when choosing one approach over another.

This collation of summary points provides a rationale for research relating to lecturer perspectives of feedback and particularly feedback through technology. The review now turns to consider lecturer experiences with learning technology per se, to understand how this theme could be investigated and to understand whether there are any additional gaps in the literature that could be addressed by a focus on this topic.
Lecturers’ experiences of technology
The review now discusses what is known about lecturers’ relationships with technology. This begins by considering how and why individuals adopt new technologies.

Rogers (2003, though first published in 1962), in his seminal work “Diffusion of Innovations”, identified the steps involved in the process of technology take up. First individuals acquire knowledge about an innovation, they are then persuaded of the benefits and make a decision to engage, next they try it out and confirm the decision through experience, or where expectations were not met, they might reverse the decision to engage. These steps appear to hold for a range of technologies, but little is known about the precise nature of priorities and concerns within each stage when applied to decisions around teaching and learning, and particularly feedback, in higher education. Rogers also hypothesised about what comes first, innovation or need; he drew examples of needs first adoption, and innovation driven adoption, which drives adoption by the creation of need. Just as Price, Carroll, O’Donovan and Rust (2011 p. 488) highlighted social factors as a possible influence on feedback, Rogers emphasised the role of social context in innovation adoption, stressing that the social system could enable or impede adoption. The role of opinion leaders and change agents was thought by Rogers to be particularly important in speeding up the adoption of desirable innovations and slowing down less desirable innovations.

Rogers (ibid.) distinguished users of technology by different categories according to when they adopted a new innovation, the groups are: innovators, early adopters, early majority, late majority and laggards. Each group is associated with particular characteristics of use, relating to risk aversion, experimental tendencies and support requirements. For a technology to be widely adopted it must reach all user groups from innovators to laggards. Within the realm of feedback and technology it is unclear whether this model holds sway. Moore (2014 but with a first edition in 1991) advanced Rogers’ work by exploring the gaps between groups of adopters. He argued that the
gap between early adopters and the early majority is like a ‘chasm’ and the diffusion of technology may cease as this boundary is encountered.

The work of Rogers (2003) and Moore (ibid.) has been applied to a higher education context by numerous researchers (including Anderson, Varnhagen, & Campbell, 1998; Bryant, 2006; Kardasz, 2013). Bryant’s (2006) research showed that in higher education diffusion of technology is irregular, and dependent upon context, but closing the gap between users and non-users was assisted by collegial structures when the technology was not disruptive. Geoghagen (1994) offered four points of explanation for why the chasm has not always been bridged in higher education; all were corroborated by further research undertaken by Anderson, Varnhagen and Campbell (1998). The reasons are shown in Box 2.2. Whether these factors feature in the experience of those developing feedback practice with technology is unclear.

**Box 2.2 Geoghagen’s (1994) barriers to technology diffusion in higher education**

1. A lack of discrete support for different types of technology user: “We seem to have assumed a sort homogeneity (in quality if not degree) of faculty willingness to experiment with and use instructional technology, thereby ruling out the possibility of recognising qualitatively distinct subgroups with different attitudes toward technology and its use in instruction” (Geoghegan, 1994, p. 11).

2. A relationship between technologists (central support units and early adopters) creates conditions that favour further innovation amongst early adopters at the expense of the mainstream.

3. “Alienation of the mainstream” (1994, p.12) occurs as innovators win praise and esteem for advancing teaching and learning, while those faculty with different objectives observe the cost and resources of this activity, and feel its disruption (for example by increased routine workload as others invest in innovation).

4. The absence of a compelling reason to buy-in to the technology may slow down adoption amongst faculty. Adoption involves a cost-benefit evaluation and unless the reasons are strong and teaching staff can imagine the gains they will make, acceptance is unlikely.
Lecturer views, experiences and choices of technology are influenced by the perceived usefulness of the technology and by user self-efficacy, or confidence (Buchanan, Sainter, & Saunders, 2013). “Those lecturer members who have high levels of self-efficacy with respect to the technologies in question may be more likely to accept their use in practice” (Buchanan et al., 2013 p.2). Hodges (2008) adds that self-efficacy is a situated concept, and consequently it may vary across contexts, for example a move from face-to-face situations to an online environment could impact an individual’s confidence and impetus to use technology. The beliefs of individuals are also important to efficacy, yet studies have often focused on local or technological barriers to adoption rather than the deeper human experience (Kregor et al., 2012). This echoes the feedback research landscape wherein values, identity and beliefs are not well considered.

Literature provides many suggestions of factors that influence technology use, including: pedagogic trends (Ottestad, 2010), national policy (Belshaw, 2012), the rise of technology in society at large (Littlejohn, Beetham, & McGill, 2012) and the subsequent alignment of local policy (Gu et al., 2012), teacher training policy (Andersson & Grönlund, 2009), student expectations (Knight & Findlay, 2013), reward and recognition (Hanson, 2003), individual lecturer characteristics including career stage (Opre, Zaharie, & Opre, 2008), pedagogic values (Kregor et al., 2012), and private theories (Churchill, 2006).

To understand lecturer experiences of choosing and using technology for feedback it is necessary to understand what factors exert influence on the choices made. It would be valuable to understand which are the dominant influences, why some factors may be more significant and how any antagonistic influences are resolved. An appreciation of this process may enable better support to be developed, barriers to be addressed and empathy to be generated.

The ways in which individuals come to make choices with regard to technology can be conceived in different ways. The technology acceptance model (TAM) is widely accepted as a means to understand attitudes towards technology use and it provides a way of predicting engagement (Sanchez,
Hueros, & Ordaz, 2013). The model assesses technological acceptance, as a proxy for behaviour, by combining a measure of the technology’s perceived usefulness with a measure of the technology’s perceived ease of use (Sanchez et al., 2013). In another model, the decomposed model of planned behaviour, intent and perceived levels of control are considered as the most important factors for determining technology behaviour (Ajjan & Hartshorne, 2008; Taylor & Todd, 1995). Here intent is seen as a complex product of attitudes, social norms and self-efficacy. These widely applied models are useful in the context of feedback technology to help signpost and frame where we might look for clues to help understand lecturers’ experience.

These models are steeped in a positivist conception of cause and effect and have been criticised for over-simplifying the issue of technology behaviour, employing determinism and rejecting agency (Bagozzi, 2007; Yousafzai, Foxall, & Pallister, 2007). Bagozzi (2007) recognises that a lot can change between an individual developing the intention to behave in a certain way and the point of undertaking the said behaviour, consequently intention is not necessarily a good measure of behaviour. Bagozzi (ibid.) also recognises that the TAM and other models do not fully account for emotions and the important role they play in shaping technology behaviours; he recognises that emotion can influence the process of self-regulation in technology engagement. Bagozzi begins to appreciate the practitioner as an active and reflective agent, at the heart of technology engagement.

Bagozzi (2007) presents an alternative approach to understanding technology-based behaviour in which the individual acts as a mediating, dynamic and changeable power. Deliberation consists of “planning, plan enactment, trying to reach a goal, monitoring progress, evaluating progress and its relationship to planning, goal desire, goal intention, action desire, action intention, overcoming impediments, resisting temptations, deflecting goal pursuit, goal realisation/failure, and feedback and its appraisal” (Bagozzi, 2007 p. 251). In the context of technology for feedback it would be insightful to understand how the technology is mediated, through these and perhaps other processes.
According to Shelton (2014) two of the most prominent concerns for lecturers who are mediating technology are enhancement and time. In his survey, which yielded 795 responses from lecturers in 27 UK higher education institutions, individuals described their willingness to engage in technology because of the enhancement benefits. However, what constituted enhancement varied, as did the necessary threshold of perceived benefit that activated engagement. Shelton revealed a cost benefit analysis process, undertaken by individuals who were contemplating technology use (similar to that described by Rogers, 2003). Within the mix of concerns, held by the lecturers, time costs were the priority. Time was not considered in absolute terms but with regard to class sizes and other contextual factors. Shelton’s research highlights the existence of relative concerns but the detail of thresholds and deliberative processes are not revealed.

Shelton also recognised the different influences on technology based practices: “lecturers operate within department and institutional cultures that may demand or value certain practices, and at the same time, they have beliefs and expectations relating to their subject discipline (or specialism) and their own personal history with technology or understanding of learning and teaching” (2014, p. 758). Shelton’s conclusion indicates a deliberative process is at work, but the findings do not provide an in-depth view of how these variables are managed.

There is limited evidence to suggest that reflection on technology use can trigger change to pedagogic practices and expectancies (Buchan, 2011). For example feedback technology can be identified as a response to a changing quality climate, which features a demand for more transparency in feedback, yet simultaneously the technology appears to be driving new modes of working (Wake, Dysthe, & Mjelstad, 2007). In a different example, Hanson (2009) argues that technology also influences academic identity. It is therefore necessary, when looking at the lecturer reality, to not only consider the influences on technology use, but also to look at the reciprocal influence of technology on practice and on self.
After considering some literature relating to the lecturer experience of technology adoption and use it is clear that:

i) Lecturers’ relationships with technology are multi-directional;
ii) Lecturers have different views about specific learning technologies;
iii) Lecturers’ relationships with technology are value laden and multifaceted;
iv) More research is needed to understand the holistic experience of lecturer use of technology.

**Generating the Research Questions**

To borrow words from Hanson, it appears that more research is needed into “messiness on the ground and the lived reality” (2009, p.556) of lecturers. Literature has shown several gaps where new research can usefully contribute knowledge. First, the experience of lecturer has been shown to be under-represented in relation to feedback. Second, the technology for feedback in itself is a little-researched area that is dominated by practitioner research. Third, the ways in which lecturers make decisions about technology are not widely considered. Fourth, literature gives signals that there might be consequences to self and practice from reflective engagement with technology for feedback, but the extent of these are unknown.

Literature showed that lecturer experience involves the collision of two enormously complex domains of practice - feedback and learning technology. Three provisional research questions combine the practice-based rationale with the gaps in literature and with what is known about the essence of the problem:

1. What are the influences acting on lecturer use of technology in relation to the provision of formal student feedback?
2. What is the process through which technology enhanced feedback practice develops?
3. How does engagement with technology for student feedback influence lecturers’ own values, assumptions and practices?

Question one begins to identify the motivations for the specific application of technology to a complex area of practice, and the answer could shine light on feedback behaviours more generally. Understanding the influences on practice is a pre-step to action in relation to staff development and perhaps the development of institutional technology infrastructures and even feedback policy.

Question two focuses on the reflexive and social processes associated with technology-enhanced feedback practice. It seeks to establish how lecturers make sense of different influences in their specific context. It looks to consider how values and identity play a part, alongside external factors, which could include those recognised already by literature. This question is important because literature on both feedback and technology recognised reflective processes at work, but showed little detail of how these happen. Moreover there is no existing literature on the reflective process in relation to technology specifically used for student feedback.

Question three concentrates on the consequences of engagement with technology for feedback. If institutions encourage the use of technology for feedback, it would be valuable to know if there are any hidden effects on individual practitioners and their outlooks. In better understanding this organisations may be in a more informed position to maximise the benefits of working with technology.
CHAPTER 3 THEORETICAL FOUNDATIONS

This chapter introduces the theoretical foundations of the study and justifies the adoption of the critical realist ontology. A derivative theoretical framework, offered by Margaret Archer, is used to add further clarity to issues that were raised in the literature review. Consideration is given to how the research questions can be investigated within the critical realist tradition; consequentially, one of the research questions is extended. This chapter forms an explicit connection between the identification of practice-based issues, in chapters one and two, and the research design, outlined in chapter four.

Ontological Foundations

Realism is an ontological approach characterised by the view that reality exists independently from us, but it also recognises that there are individually constructed perceptions and experiences (Danermark, 2002; Gorski, 2013; Maxwell, 2012a). Realism acknowledges that people generate knowledge about the world, and so their own reality may be dependent upon the context of production (Maxwell, 2012a). While the independent, external world is relatively enduring the human construction of that reality is changeable (Case, 2013). Realism is not a middle road, born out of an acceptance of both naturalistic and interpretive approaches; it was formed out of dissatisfaction with both of these historically prevailing paradigms (López & Potter, 2005; Maxwell, 2012a; Sayer, 2010).

Moses and Knutsen (2007) permit researchers to shift between naturalistic and constructivist approaches as research problems necessitate, but this does not address the weaknesses of either approach, it simply accepts them and tries to work around them. By contrast realism confronts these perceived weaknesses by accepting both the external and internal realities as coexistent, and in so doing bridges the ontological divide (Modell, 2009; Pawson, 2006). Though it is beyond the scope of this chapter to explore the origins of realism, it is important to note the philosophy as a distinctive third way rather than a middle-ground compromise.
The personal choice of critical realism
My own adoption of critical realism is new. Until this point in my academic career I have switched between ontologies as the problem being considered necessitated. I was pragmatic (using the definition of Robson, 2011). I was able to operate in the traditional positivistic mode and in a constructivist, largely qualitative mode. With a discipline background in geography and education it is perhaps unsurprising that I have been a methodological chameleon, since each discipline is a broad church of traditions. Encountering critical realism allowed me to uphold my acceptance of the external reality and the individual interpretation without the need to change positions in the moment.

New insights from a novel approach
Critical realism offers a fresh way of looking at technology use in feedback. The approach has been used to investigate related issues such as academic staff development and the use of technology in organisations (see for example Crawford, 2010; Mutch, 2010), but amongst the literature on lecturer experiences of feedback or feedback technology no studies appear to embrace critical realism. New insights are hoped for by utilising a novel perspective.

Key features of critical realism
According to Maxwell (2012a) and also Pawson (2006) realism has a complex family tree, its variants include critical, agential, experientialist, emergent and natural realism. Critical realism, derived largely from the work of Roy Bhaskar (1978), provides a meta-theory to guide research. Critical realists recognise the world around us as being structured, stratified and fluid (Danermark, 2002); in turn this leads to a particular view on causation, which is significant for the design of methodology. Stratification and causation are now outlined in more detail.

Stratification
Through a realist lens, the world may be seen as comprising three layers. The subjective worlds of individuals are known as the empirical; the observable world of events and happenings is known as the actual; and the real domain refers to features and mechanisms that may or may not be observable, but
which exert influence on the actual and empirical (Case, 2013; Danermark, 2002). Within these layers of reality mechanisms exert causal power. Mechanisms need to be unveiled if the empirical is to be truly understood (Danermark, 2002). Realists are concerned with the relationships between these different layers (Scott, 2000) as well as with their individual characteristics and properties (López & Potter, 2005). Fairclough (2005) suggests that understanding the inter-relationships of the different strata is tricky because the influence of the real on the actual may not be easily discernible.

A significant difference between critical and empirical realists is the importance placed on different strata. Critical realists treat the empirical and actual as superficial phenomena, and seek out the underlying influence of the real, while empirical realists place their emphasis at the level of the empirical (Ayers, 2011). Critical realists are particularly concerned to examine the causal power of the real domain.

To help crystalize the notion of stratification, and to establish its usability in the research context, an example of a multi-layered reality is offered in Table 3.1, using an illustration from the everyday practice of faculty experience of technology use for feedback. This example is based upon my own experience and in no way forms part of the research data.
**Table 3.1 Stratification in relation to lecturer engagement with technology enhanced feedback.**

<table>
<thead>
<tr>
<th>Level</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Empirical</td>
<td>Subjective experiences</td>
<td>James has private concerns about the workload associated with offering formative feedback on draft work; these concerns are based on his prior experiences. After discussion with colleagues, he is worried about how much feedback he should give. He is concerned to ensure he upholds quality assurance principles of parity. His engagement with colleagues leaves him nervous about breaking any rules.</td>
</tr>
<tr>
<td>Actual</td>
<td>Real happenings and events</td>
<td>James uses technology to provide feedback to his students but to ensure he is fair to all, he sets parameters for how much feedback is given. His subjective experiences and the force of the mechanisms in the domain of the real combine to shape the observable experience.</td>
</tr>
<tr>
<td>Real</td>
<td>Influential mechanisms that can only be revealed by a consideration of the other layers</td>
<td>A quality management policy exists to guide feedback practice. The policy permits unlimited feedback but the quality assurance landscape is intimidating and popular myths exist amongst faculty about what type of use of technology is permitted and how much feedback can be given on drafts. Both the policy and the associated culture act as influences on practice (determining boundaries) and the subjective experience of this practice (including how the practice creates nervousness).</td>
</tr>
</tbody>
</table>

Table 3.1 illustrates important critical realist principles:

i. Individual experiences can be rooted in personal history and are situated (Maxwell, 2012a);

ii. The empirical can be seen to influence the actual, as behaviours are modified according to the private reality and the internal decision making process;

iii. The essence of the real strata can be understood by the consideration of happenings within other layers (Danermark, 2002).

**Causation**

Critical realists reject the scientific tradition, which identifies causation as a construct that must be inferred through associations (Sayer, 2010). Hume’s idea of discovering causality by inference “drain[s] the concept … of all its
content, so that causality … is reduced to constant conjunction” (McBreen, 2007 p. 481). By contrast, critical realism seeks to explain causes with rich detail and meaning.

Critical realists do not hold the position on causation that is often adopted by interpretive researchers, where causal claims are made only tentatively. Sayer (2010) describes that researchers in the qualitative realm have only dared make limited claims in relation to causation because they have stood in the shadows of positivist dominance. Critical realists reject the approach of qualitative researchers who claim that causation can’t be found because of their belief that regularity itself can’t be found amongst the complexity of the social world (Maxwell, 2012a; Maxwell, 2012b). Critical realists note that cause need not be conditional on the presence of regularity since “objects and social relations have causal power which may or may not produce regularities” (Sayer, 2010 p. 2). The pursuit of causation must not to be confused with the search for laws (López & Potter, 2005). Critical realism permits us to “call off the search for ‘general laws’ without simply abandoning the goal of causal explanation” (Gorski, 2013 p. 659). The search for evidence of causal relationships needs to transcend the different strata and involves piecing together clues (Danermark, 2002).

A review of the practice-based scenario offered at Table 3.1 can illuminate these features. In the example, the quality culture and policy acts as a constraining influence on James’s practice, but this is activated (i.e. it becomes a constraint) only once he had developed an objective to give formative feedback. This also exemplifies that essentially “structural power depends on agency for its causal efficacy … it necessarily has to be mediated by agency” (Willmott, 1999 p. 19). Influences on practice cannot be perceived as causes until evidence from the actual and empirical domains has been gathered. Thus “causal mechanisms cannot be apprehended directly as they are not open to observation, but they can be inferred through a combination of empirical investigation and theory construction” (McEvoy & Richards, 2006 p. 69). By implication this research must piece together parts of the experiential puzzle of participants.
Strata, causation and this research

In keeping with critical realist principles this research investigates individual experiences and seeks a depth of understanding about how the layers of reality interact to influence practice. The distinction of strata provides places to look for the causes and effects of observable phenomena. Given that practitioners themselves must activate causal mechanisms and because individual experience and context shapes the individual’s perceptions, causation should be considered on a case-by-case basis. Perception, experience, feelings and actual practice provide windows to strata; stories and an understanding of context are therefore important.

Archer and critical realism

Margaret Archer offers a “mediating framework” to make the critical realist perspective more accessible (Kahn, Qualter, & Young, 2012 p. 860). Within this research Archer’s work provides a means of further understanding the interaction of the strata as related to lecturers’ experiences and it offers a framework to assist in illuminating the internal, subjective, empirical layer, and by inference the influences upon it.

Archer (2000) proposes that structures and agents co-exist but rejects the idea that structures have a fully deterministic role on individuals. Instead she describes that agents have their own properties and powers, or “sui generis” (Archer, 2000 p. 17). Different individuals exercise these powers differently at different times. The primary agent essentially exists in circumstances without an obvious plan for engagement with the context, though he or she is not passive. The corporate agent knows what he or she wants, can articulate this and action a plan to progress their priorities. Corporate agents who share an overlapping purpose can bring about significant change, even outside of formal structures (Archer, 2000). Neither corporate nor primary agent status is fixed.

Archer (1995) urges researchers to separate the elements of structure and agency as analytical units to understand the respective contribution of each. This approach is called analytical dualism. This process is a holistic process since it looks not only at the parts, but also at their connections and
interactions. Given that critical realism has emancipatory undertones (Robson, 2011) analytical dualism need not seek a passive assessment of each scenario, it can instead identify opportunities for change (Willmott, 1999). In this research the rejection of technological romanticism means that the opportunity for change should not be underpinned by an agenda of technology promotion.

**Change and the morphogenetic cycle**

Structures and indeed society at large shape an individual’s actions and experiences, but still individuals operate with independence of mind and free will (Archer, 2000). Individuals are not passive; they exercise their power to shape the structures that shape them (Archer, 2003; Archer, 2000). Fairclough (2005) describes agents “as socially produced, contingent and subject to change, yet real, and possessing real causal powers” (2005, p. 923). This fluidity results in a change process described as a *morphogenetic cycle*. Essentially structures shape the action of agents, but then the agents exert influence on the structures, and change ensues. In this sequence the agents are mediators of change (Willmott, 1999).

The type of change that emerges in time can take many forms (Archer, 1995) but these are encapsulated within four main possibilities: *Morphostasis* where that status quo is maintained, *developmental change* where there is an evolution or enhancement of existing structures, *interactional change* which is essentially chaotic, and *creative change* in which structures change dramatically but in a stable way (Donati, 2013). Building on Archer’s work, Donati (2013) goes on to describe morphogenesis as a relational process. He identifies change as being a product and process of social networks wherein choices and opportunities are made possible or closed down by and through the network. The diversity of relationships within the network works to give stability, working as a moderating process on emergence.

**Structure, agency, morphogenetic cycles, relations, and this research**

This research respects dualism; giving particular attention to uncovering the interaction of structure and agency. This is especially relevant to the search for influences on practice since agents need to in some way be touched by a
structure for it to show itself. Given the academic community dimension of a university, the role of social relations as a mediating, moderating, change-making domain will be explored as a space in which practice may form.

The concept of morphogenesis reinforces the need to understand the reciprocal influence of faculty on the structures that influence them. The third research question asks: How does engagement with technology for student feedback influence faculty’s own values, assumptions and practices? This question reflects gaps shown in the literature relating to an internal change process that may exist, but this does not explicitly capture the possibility that faculty who are engaged in the said area of practice could be (re-)shaping their context, as well as their inner-self. This question is extended to reflect this point. Following this inclusion the research question is refined to ask “How does engagement with technology for student feedback influence faculty’s own values, assumptions, practices and context?”

The internal conversation
Archer’s idea of the internal conversation (2003) is thought helpful to understanding the reflexive and reflective processes associated with the use of technology in feedback. Understanding the internal conversation provides a window to the inside-out view of practice, as was called for several times in Chapter 2.

The internal conversation is a process through which individuals decide a way through issues arising, in a way that fits with personal identity and context. It is the narrative that exists inside oneself to mediate the influence of structures and social interactions. According to Archer (2003) mediation arises from three clear steps:

1. Structures shape situations in which individuals find themselves; these factors give rise to constraints and enabling factors (this involves objective forces exerting on the process).
2. Agents form their own concerns and priorities, and projects (this is a subjective part of the process).
3. Agents reflect to subjectively find a way forward (this is a fusion of objective concerns and subjective considerations).

Accepting Archer’s three-stage mediation process provides a framework through which faculty experience with technology for feedback can be considered. Revealing the essence of the three stages will directly assist in answering the first research question, with its focus on influences on practice, and the second question, which seeks to understand the process of engagement.

Archer (2003; 2007) proposes different ways in which individuals hold the internal reflexive conversation. Variation is found in the level of social engagement sought, the priority given to different factors e.g. goals, the content of the conversation and the level of self-awareness. Archer (2003) identifies that individuals display one of the following modes of musing:

1. Communicative reflexives share their thoughts with others before choosing a course of action or a way forward: “having raised an issue intra-personally, they seek to resolve it inter-personally” (Archer, 2003 p.167). This dialogue reassures instances of self-doubt and acts to complete the conversation in full.

2. Autonomous reflexives emphasise solitary internal dialogue and performative goals. Essentially this group comprises career or goal oriented individuals who are self-reliant in the face of changing contexts. Autonomous reflexives have an awareness of their weaknesses but they seek to address these in controlled ways.

3. Meta reflexives undertake self-scrutiny and prioritise ideas in the face of change. At the heart of the meta-reflexive’s conversation is self-knowledge and self-awareness.

4. Fractured reflexives lack the full causal power associated with agency. Their power may be temporarily weakened and the ability to rationally pursue reflective tracts impeded.
This typology may help shed light on the ways in which individuals, involved in this research, develop their practice. For example, are those using technology using it for the greater good and to adhere to principles of enhancement (as might be expected for a meta-reflexive) or are they seeking to advance their own career? What about the role of others? Is technology in feedback the product of networks and community or is a solitary approach taken? The research does not seek to prove links between one or another reflective type and specific behaviours, recalling that critical realism does not search for laws and regularity. Instead the reflexive depictions are used as one piece in the jigsaw to understand how choices are made.

**Archer’s theory and the research design**

Archer’s constructs have been visually applied to my initial conceptions of technology based feedback practice. The diagram, at Figure 3.1, shows the role of faculty as an agent in the practice milieu of digital forms of feedback. It shows some influences on practice, including some of those identified in the literature presented in Chapter 2. The faculty agent is working in an enabling and constraining context. The agent does not stand-alone though and can be seen to have relationships that give rise to social practice and relational morphogenesis. The visual identifies the upward or reciprocal influence of engaging with technology that is suspected, though not detailed in literature. Added to this is a possible influence of the agent on the context. This shows the complexity in which the teacher is operating and highlights the clarity brought about by the theoretical constructs offered by Archer. The research seeks to detail this conception, or to challenge and reimagine it.
Re-framing the research questions

Lukkett (2012) used Archer’s work to frame research around academic programme development, but cautioned that the approach “operates at such a high level of abstraction, it is sometimes unclear how to operationalise her concepts, leading to the possibility that the theory over-determines the data” (Lukkett, 2012 p. 350). This advisory point reminds me to use this work only as an aid to help unpack the lecturer’s experience and to steer the internal logic of analysis. This study does not attempt to validate Archer’s work, instead it seeks to use some of its key principles to help uncover meaning about lecturers’ relationships with technology for feedback. Archer’s influence on this study mainly occurs in the operationalisation of the research questions. These are now re-visited to ensure that critical realism and the theoretical cornerstones cited are used as a living ontology. Table 3.2 highlights issues arising from a critical realist interpretation of each research question.
**Table 3.2 Critical realist interpretations of the research questions**

<table>
<thead>
<tr>
<th>Question</th>
<th>Critical realist implications</th>
</tr>
</thead>
<tbody>
<tr>
<td>What are the influences on lecturer use of technology in relation to the provision of formal student feedback?</td>
<td>Identify any generative mechanisms from the real strata e.g. internationalisation. Consider the role of structures, including socio-cultural ones. Consider the role of policy on practice. Identify how factors personal experience influences practice. Identify the barriers and enablers that are triggered by practitioner intent.</td>
</tr>
<tr>
<td>What is the process through which technology enhanced feedback practice develops?</td>
<td>Ascertain how projects are formed. Consider the processes used for developing practice with particular regard for the form and content of the internal conversation. Consider how any generative mechanisms are reflexively dealt with. Identify the role of others in shaping practice.</td>
</tr>
<tr>
<td>How does such engagement influence in turn the practitioner’s values, assumptions, practice and context?</td>
<td>Consider the journey of the faculty member. Ascertain any changes to practice. Locate any realisations or critical incidents. Locate instances of institutional change related to the adoption and use of technology and feedback.</td>
</tr>
</tbody>
</table>

Chapter 4 now identifies how this framework can be fulfilled through a coherent research design.
CHAPTER 4 RESEARCH DESIGN

This chapter outlines the research approaches employed in this study. It justifies the narrative inquiry methodology, the interview method and the use of connecting and categorising analytical strategies. Finally, some key ethical issues are identified and the steps taken to mitigate risks are described.

Narrative inquiry: Features, rationale and challenges

At its most simple a narrative is a shared story (Kvernbekk & Frimannsson, 2013), but still the ‘narrative’ has many definitions (Andrews, Squire, & Tamboukou, 2008). Forms of narrative research are also diverse (Andrews et al., 2008), for example, narrative research and narrative inquiry are subtly different, with the latter having a greater awareness of temporal dimensions of identity (Webster & Mertova, 2007). Within narrative research, stories may be used in different ways: to articulate learning from a study, to encapsulate the experiences of participants, and to provide the basis of a thematic analysis (Pinnegar & Daynes, 2007). There are no rules for conducting narrative inquiry (Josselson, 2011; Pinnegar & Daynes, 2007) instead narrative researchers are guided by principles (Josselson, 2011), which include flexibility, empathy, co-creation and representation.

Narrative inquiry was selected for a four main reasons. It was chosen because of its congruence with the epistemology. Correspondence between the different elements of the research design is important for internal consistency (Crotty, 1998; Zachariadis, Scott, & Barrett, 2013). Narrative was also selected because of its ability to answer the research questions. The narrative methodology embodies the interpretivist notion of subjective perspectives and can shed light on the nuances of experience, as emphasised by critical realists. Stories provide insight in to the impact of different strata as well as the experience and perceptions of individuals. Chapter two established the under representation of faculty amongst studies on feedback; narrative research emphasises the need for participants or groups to be heard, and listened to (Chase, 2011). Finally, narrative studies in education can spur practice improvement (Webster & Mertova, 2007). Although this study did not begin with an explicit change rationale, the
potential for positive emergent change fits with my own values relating to action improvement in education.

**Interview**

Individual interviews were used because they offered access to the essence of faculty experience and provided a dialogic forum to explore personal histories with respect to feedback and technology practice. As the majority of the research was to be set in my own institution, the interview provided a reflective listening space for me to step back from assumptions that I have about the way things worked.

The extent to which an interview can truly represent individual narrative is debated. Czarniawska (2004) argues that a person’s account is relatively stable and would not be refashioned significantly during an interview, whereas Josselson (2011) highlights the role that audience has in shaping the narratives deployed; Josselson argues that accounts are changeable. Even though Czarniawska (2004) argues that narratives are relatively stable she does acknowledge that participants may seek to present themselves in a positive way; this fashioning, she adds, could be linked to Bourdieu’s concept of officialisation, which essentially causes the account to reflect the links individuals have, or seek to have, within prevailing power structures. In practice the risk of stories being fashioned was reduced through making a clear distinction between my role as an interviewer and my professional practice by using a none work email address in research based correspondence, providing reassurance of the separation of roles, and the building of trust and rapport so that individuals are comfortable to be honest.

Interviews can take a format akin to an organic conversation or they can be something more structured. To develop the interview approach for this study I discussed the possible formats with critical friends\(^2\). The critical discussions with colleagues provided an alternative to a pilot interview. Discussion about the interview design was thought to be more helpful than an actual rehearsal of the questions. Moreover to complete a pilot interview with a real practitioner

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\(^2\) The critical friends referred to here are trusted colleagues who acted as a sounding board for emerging ideas. These individuals were not involved in the research in any other way.
would then exclude their data from the study and their opportunity for representation would be lost.

Through the engagement with others, it became apparent that when I framed the interview as an open opportunity for storytelling with limited structure, participants might be unclear about the importance of their experience and deliberations around feedback and technology, and as such only offer a limited account. Questions from the critical friends, such as “what are you getting at when you ask about the journey or story?” made it clear that some structure would be needed to facilitate the interview. For this reason a semi-structured approach was taken.

The interview structure borrowed heavily from narrative principles. The sequence of questions was designed to guide the discussion through a temporal recollection of experience and deliberation, beginning with a focus on the formation of practice. The sequence also aligned with the research questions. It followed a four-point pattern which covered i) background and values ii) influences on practice iii) deliberation iv) impact. A copy of the interview schedule can be seen at Appendix 1.

The precise questions in the guide were formed through clues in the literature about what was likely to be significant within individual stories (e.g. efficiencies, feedback beliefs). The openness of the questions tried to balance the possibility of building on existing theory with the discovery of new insights. I was mindful of the balance between being “formulaic” and being “slack” in the production of a narrative; this is something Archer (2007 p.269) cautioned about in regard to writing narratives but I believe it applies equally in the co-creation of narrative.

The actual interviews were far less rigid that the schedule alone would imply. The plan in practice quickly emerged as a checklist for coverage. It guided my own attention and that of the participant but it did not work as a formal script. We frequently went ‘off piste’ to explore interesting and significant details within an individual’s story. Participants moved between their experience of
one technology and in to their experience with another with great fluidity. The flexibility of the interview framework provided the space for the individual priorities of interviewees to unfold and to be further explored. The adaptable plan helped avoid being either formulaic or slack.

As each interview was undertaken the insights gleaned became more focused. For example, as it became clear that prior industrial experience might have a bearing on feedback and technology use, the coverage of this topic in interviews grew through a refinement of the questioning technique. This increased awareness of different points of interest was a consequence of some of the analysis occurring between interviews. The ability to deepen understanding by using refined questions was deemed more important than the need for absolute parity between interviews. This is an example of where narratives are co-constructed and the focus of the interviewer inevitably shapes the emerging narrative. Throughout the interviewing phase I was aware of the risk of directing participant attention and I continually needed to balance my own desire to dig deeper on certain themes with the risk of moving ownership of the story away from the participant. Interviews varied in duration from forty minutes to one hour and thirty minutes, most lasted for approximately one hour.

**Sampling and design**

There were two phases in the data collection process. The first phase was in my home institution, Robson University, and the second phase occurred in four different external institutions, each of which had a different size, culture and location (the key features of each institution are outlined in Chapter 6). By first gathering a range of narratives from a single institution, a greater understanding of the impact of context was enabled because the way in which the real strata manifested could be seen through multiple individual perspectives. External interviews were included to highlight mechanisms that work across institutions in the UK context, to identify the role of contextual factors in different situations, for researcher development and to enable stories to simply be shared for mutual learning. The second, external phase enabled the theories that were built within the home institution to be compared to the experiences of others. The broadening of the study was not to locate
patterns in the data; since within a critical realist approach data does not need to yield patterns to be generate insight.

Maxwell (2012a) claimed that qualitative studies are generally not concerned with representativeness; instead they focus on selecting participants who can inform the topic under investigation. In line with this view sampling was purposeful and individuals were chosen mainly on the basis that they were actively engaged with technology in their provision of formative or summative feedback on written assignments (there were two exceptions to this which are explained later).

A total of twelve participants in the home institution were engaged in the study through a process of purposeful sampling. Through my work role I knew which lecturers were involved in using technology for feedback. I corroborated my own list of practitioners with the records held by e-learning colleagues so to ensure that I did not exclude anyone because of my own partial view of the organisation. I first invited ten individuals from within this group to participate in the study. The sampling sought to achieve different perspectives by selecting participants who had varied discipline backgrounds, used different technologies, had different levels of visible confidence with technology and who had been engaged in this area of practice for different periods of time. After ten interviews the data had begun to converge and limited new insights were being generated. The data suggested that there was an interesting relationship between those practitioners who do utilise technology for feedback and those who do not. Reflecting on this point, and combining it with the underpinning value of empathy, I felt compelled to represent the voices of those not involved in using technology in feedback. Understanding why people did not engage with technology in their journey was important for completeness. Two more interviews were undertaken with individuals in my home institution who were not using technology in feedback. Seeking ‘non-users’ has exclusionary connotations and participant engagement needed sensitive management. The selection of these additional cases was purposeful, and convenience based. By engaging with known colleagues, they could be assured on the basis of existing trust that the interviews were to
be undertaken in a non-judgmental way in the spirit of inquiry. The two colleagues are people with whom I have worked at various points but who were not in my close network. These two participants were given assurances that their stories were being collected for representation and not as a negative example of practice. Both welcomed the opportunity to tell their story. The interview schedule was adapted (and is shared at Appendix 1).

The interviews at my home institution were held over a three-month period. The time frame was determined mainly by mutual availability. However, the spacing of interviews at between five and ten days apart allowed me to contemplate issues arising without any disconnection from the unfolding research story. Transcription, familiarisation, and the formation of narrative portraits were undertaken in the gaps between interviews. External cases were sought once the analysis of internal cases was complete.

It was challenging to recruit external participants. My own educational developer networks tended to attract extreme users i.e. those who use a great variety of technologies and individuals who were not ‘mainstream’ teachers. Instead I relied on wider personal and professional networks to locate potential participants and this brought some variation in the experience base of individuals in the sample. I previously knew none of those interviewed.

The approach to engaging participants in the external phase of the research did have some known weaknesses. A call on social media was more likely to reach enthusiasts. Similarly using contacts to put me in touch with users of technology for feedback tended to excite others to connect me to the most technologically engaged. Additionally, social media exchanges used to seek participants are effectively public and so there is a risk to identity being revealed through an online digital footprint.

Eventually five participants were recruited and interviewed (all names are pseudonyms).

- Peter, Sue, Adam and Tony were recruited through mutual contacts in other institutions (convenience sampling)
Matthew was recruited through a public social media call for interest in the study.

During the interview Peter’s experiences of technology for feedback emerged as being related to in-class feedback rather than feedback on products of assessment. His experience was outside of the parameters of the project. For this reason Peter’s data was excluded from the study. Though five participants were interviewed in phase two of the research, the data of only four is incorporated into the study. The detail of all of the participants are summarised at Table 4.1.

**Table 4.1 Interviewees reasons for inclusion or exclusion from the study**

<table>
<thead>
<tr>
<th>Number of lecturers interviewed</th>
<th>Status within the study</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>Lecturers at Robson University (users of technology in feedback) - included in the study.</td>
</tr>
<tr>
<td>2</td>
<td>Lecturers at Robson University (none users of technology in feedback) - included in the study.</td>
</tr>
<tr>
<td>4</td>
<td>Lecturers at external institutions (users of technology in feedback) - included in the study.</td>
</tr>
<tr>
<td>1</td>
<td>External case not incorporated into the study because experiences were beyond the operational definition of feedback.</td>
</tr>
</tbody>
</table>

**Analysis**

Smith (as cited in Maxwell, 2012a) highlighted two distinct forms of analysis – one that sheds light on interconnected parts of narratives, and one that seeks out similarities between cases. Within this research, a two-part approach to analysis exploits the complementary benefits of each method.

**Connecting Strategy**

A portrait is a narrative style summary of the data, told through the words of the participant but in a condensed form to assist access, and without a loss of meaning (Seidman, 2013). The portrait particularly emphasises connections between different aspects of the account. It provides a clear description of individual voices, thus allowing each participant to have his or her story made explicit.
According to Khuns (1974 cited in Webster & Mertova, 2007) a benefit of sharing stories is the production of instant knowledge that individuals can immediately connect with and learn from. As I created portraits, participants conveyed their wish to see the stories generated by other interviews, particularly from other institutions. Within this research portraits were primarily created to aid understanding, however the value of the narrative as a product could not be ignored. As a result of requests from participants, the full collection of portrait stories formed through this research has been published as an online resource (Arnold, 2014a). The emerging sense of value associated with these stories directly impacted the research design. When accessibility to participants became a challenge in the external phase of the research, the obligation I felt to deliver on stories from beyond my home institution was compelling.

Despite Peter’s story being beyond the specific coverage of this study, his narrative portrait has relevance and resonance with some of the stories about formal feedback and his story is intrinsically interesting. Peter’s narrative is therefore included in the publication, alongside others, to ensure some benefit arises from the investment of both the participant and researcher’s time.

The creation of portraits involved close and repeated reading, careful listening and the marking of the transcript with comments and annotations that identified strong themes and connections within each interview. It involved whole self-immersion in the material. It was a process of intimately getting to know the data and marking up what seemed important, as indicated by emphasis of voice, by repetition or by the strength of claims. I then listed the essence of the annotations, in the order that they occurred, and built up a sense of the key messages and processes of deliberation (see Appendix 2 for an example of a portrait development list). I then referred back to the original transcript and selected extracts, which illustrated the main messages and the essence of the story told by the participant. This was a work of craft which involved ‘to-ing and fro-ing’ between the raw narrative and the meaning making notes.
Within the narratives, to protect the identities of participants, some biographical details were deliberately omitted; for example if a lecturer had a unique subject specialism that makes them easily identifiable, the overarching discipline was cited instead. Elements of the account that were potentially damaging to individuals were intentionally left out. For example comments about other colleagues were avoided to ensure non-disclosure and identity protection. Any points of interest, which were knowingly left out, were subsumed within the categorising analysis and thus would not be lost from the overall research. Pseudonyms for each account are believed to reflect the age, gender and ethnicity of participants. These decisions were examples of ongoing engagement with ethical dilemmas.

To ensure that each portrait was representative and that the participant felt that their voice was reflected fairly and accurately, the portrait was sent to the interviewee for checking and with an active invitation to add, delete or comment on the portrayal. Four participants made minor changes to their narrative. Two requested the inclusion of more biographical detail and two addressed points of accuracy. Because the portraits were to be shared in their full form, participants were particularly counseled to ensure that they felt the account, though anonymous, was in no way compromising or damaging. An example of a portrait is shown at Appendix 3.

The production of the stories is not the final step. Siedman (2013) urges researchers to go beyond the creation of a representation and ask what has been learned. To this end, insights and learning from the creation of the portraits are fed in to the two chapters on findings. The role of the narratives in the analysis and findings is detailed at Table 4.2.
Table 4.2 The role of the narratives

<table>
<thead>
<tr>
<th>Role of the narrative</th>
<th>Specific actions</th>
<th>Relationship with Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Representation and trustworthiness.</td>
<td>Portraits were published online with an example offered at Appendix 3 and mini portraits included within chapter six.</td>
<td>The portraits and summary-portraits distill the essence of the individual story and in their own right the stories speak for themselves. Within the findings the portraits can be used to cross check whether the summarised findings ‘ring true’ with the individual accounts. Webster and Mertova (2007) suggest that access to reliable records of individual stories is the “cornerstone” of trustworthiness in narrative research. Additionally the publication of stories was a way of allowing participants in the research to gain benefit from sight of each others experiences.</td>
</tr>
<tr>
<td>Learning</td>
<td>The construction of stories immersed me fully in to the experience of the participant, both emotionally and cognitively. By constructing the portrait narrative of the individual I was able to locate the essence of the story. The idea of immersion can be associated with a holistic approach to analysis; as advocated by Guba and Lincoln (1981).</td>
<td>The learning about individual situations enabled me to locate important features of individual cases which would not have been located by coding alone, for example the role of ‘luck’ in landing in a team within Chris’s story and the theme of professionalising students through feedback in Ellie’s story were located through the narrative creation. These rich components of stories are only findable with full concentration on a case; they might otherwise have been lost in a search for commonality.</td>
</tr>
<tr>
<td>Explanation and causation.</td>
<td>When similarities were found between cases and when links were found across categories the narratives, and the learning from their creation, provided a means to understand what was going on in context.</td>
<td>Where the categorising analysis shone light on the existence of specific phenomena, the narratives were able to show what causality was at work deep within stories. For example when Marcus identifies legibility as a trigger for turning to technology, his own narrative details the role of others in alerting him to the issue. Without the narrative the findings would not have been able to look at the connected themes within cases and at how they work together.</td>
</tr>
</tbody>
</table>
Categorising (coding)
The categorising analysis helped to identify similarities between cases. The
coding process was enabled by a piece of software called MAXQDA11 (see
Appendix 4). MAXQDA11 allowed codes to be formed, reformed and linked in
different ways as the coding system developed. If a category was necessarily
changed by emergent information, the software allowed this rearrangement of
ideas to occur in a non-disruptive way.

The strategy for coding was largely open. Substantive codes were mainly
derived from the data itself, but there was some organisational pre-definition
which was derived from prior theory and understanding. Specifically the
coding process used ‘bins’ or categories to initially organise the data rather
than describe the data (as advocated by McMillan & Schumacher, 2001). The
organising categories were initially derived from the critical realist
interpretation of the research questions developed in Chapter 3 (see Table
3.1). Illustratively the organising categories included motivation (to engage in
technology for feedback); structures & cultural issues as an influence on
practice; technology attitude; feedback orientation; concerns (within the
reflective process) and impact. Within the organising categories substantive,
descriptive codes were formed through open coding, using an inductive
approach. As the substantive codes evolved so too did the organising codes.

The only exception to the open coding technique was in relation to the internal
conversation; data in this thematic area was mapped to Archer’s different
categories of internal conversation. The use of theoretically derived categories
for this aspect allowed the research to establish to what extent Archer’s
theory, in relation to internal conversations, was helpful to encapsulate the
experience of faculty in relation to technology for feedback.

To ensure consistency in the process I revisited each case several times. I
coded a single transcript and then revisited previous transcripts to see if new
codes would apply there too. For example, one participant mentioned that
their postgraduate certificate in teaching acted as a reflective space rather
than a direct influence; I was then able to look back across other transcripts and see the same point and code it accordingly.

The external cases utilised the codes developed from the internal cases, but where appropriate more codes were added. No codes relating to Robson University were changed as a result of additional cases. The coding software allowed the external cases to be filtered or to be seen as part of the larger data set of all the participants, this allowed easy identification of similarities and differences.

The products of the analysis that inform the findings included:

- The list of codes and their frequency, within the framework of categories and organising 'bins';
- A map of where codes existed in close proximity to each other within a transcript to enable human interpretation of whether phenomena were related (co-occurrence visual);
- A visual of which cases a single code applied to – enabling commonality to be instantaneously recognised;
- Vignette extracts associated with each code to illustrate and qualify the phenomena.

**Blending the two strands of analysis**

In the presentation of findings the two strands of analysis are blended to provide a single account. The blending occurred in the following ways:

a) Frequently occurring codes were explored further through the connections in the stories to locate causation. By example, coding drew my attention to the widespread importance of space. Referring to the coded vignettes offered some indication of the role played by spaces in the formation of practice, but learning from the construction of narratives gave a sense of how important this factor was and how it connected to other parts of individual stories. I was able to look at the narratives of the affected participants and sense the power of this influence.
b) Codes which appeared to be related were explored in the narratives and associated annotations to identify whether causal relationships were at work. Here patterns were used as an alert, and no assumption of causation was assumed unless the connecting analysis showed this;
c) Where a theme in the narratives was strong, though not necessarily common it was included in the findings despite the coding not identifying it as being widespread;
d) Where codes showed particular characteristics, behaviours or factors at work, the narratives were used to check that the reduction to codes did not distort meaning, particularly with reflective processes. For example, one respondent had coded repeatedly as ‘communicative’ – I then stood back and looked at the narrative and asked is this a fair reflection of the story? Or, has relying on quantity of occurrence, rather than the strength of connections in the data, painted a distorted picture of what the individual found significant? There was constant movement between the portraits and associated notes and the codes. Researcher reflexivity was central to the analysis.

The findings displayed in chapters five and six reflect this blending process. In this blending vignettes of data are used to add transparency to the analysis and interpretation process. All vignettes are original transcript extracts and some were generated exclusively through one strand of the analysis, others were highlighted from both analytical processes.

**Ethical considerations**

I made plans for mitigating different specific risks within the research; for example, in my ethical approval application I proposed that:

- Participants may not want some comments to be attributed to them as they could be professionally damaging. Anonymity was employed to lessen this risk.
- Participants were given a cooling off period between the initial approach and the issuing of key information such as the participant information sheet and the interview schedule, and the actual interview, so that they had the best opportunity to engage with the briefing information and make an informed choice.
- Participants were not vigorously pursued if they were initially not responsive to the idea of joining the project.

Beyond these planned methods and precautions, during the research I employed a reflective approach where ethics became part of the routine deliberations according to the unfolding trajectory of the research. Williams (2009) recognised that not all situations can be planned for, he adds that the researcher must remain aware of issues arising and employ an ethical mindset. A number of the ethical issues encountered during this research have already been touched upon in this chapter, including the sense of duty to participants to share narrative portraits and the inclusion of individuals who were not using technology in feedback; both of these decisions were formed through ongoing reflection, and after discussion with my supervisor.

An additional dilemma, which required a thoughtful approach, was the disclosure of views of a personal nature after the interview recording had stopped. Such views typically related to specific colleagues or institutional challenges. The chat at the end of the interview worked to teleport roles from researcher-participant back to two colleagues chatting. This happened three times. The dilemma was that the interview had finished, the roles had reverted but the discussion was illuminating and valuable. I sought permission to note the themes of the additional material – but without recording the detail of specific names or incidents. Where this was given I included my summary note as an appendage to the transcript, which was in turn checked by the participant concerned for accuracy and to ensure they were comfortable to be associated with these additional comments.

**Summary**

The research process was designed to balance pragmatism, internal consistency and alignment to the ontology. Rather than addressing ethics as a single issue, as an adjunct to the research design, I have endeavored to uphold an ethical mindset throughout the planning and execution of the research. The findings from the research are presented in the next two chapters.
CHAPTER 5 FINDINGS: ROBSON UNIVERSITY

The findings from twelve interviews at Robson University are described and discussed in this chapter. The material presented is the product of both categorising analysis and the connecting analysis, as described in Chapter Four. Common experiences, as shown through the coding process, and perspectives from individual stories are represented. Choices about which findings to include and which to omit from this chapter were necessarily made, priority was given to i) the strongest themes for individuals ii) the most widely occurring phenomena and iii) phenomena which relate to answering the questions within the research framework, shared earlier in Chapter Two. Throughout the chapter findings are conveyed through a combination of vignettes and descriptive summary. The discussion of emerging themes is undertaken with respect to the literature that was explored in Chapter 2. The decision to blend the discussion with findings recognises that interpretation is needed to find meaning in the data. To avoid blurred lines between the words of participants and interpretation of those words clear signposting of vignettes and summaries of collated findings is maintained.

The findings are not explicitly organised around the research questions as this would work to disaggregate experience, reflection and the impact of practice whereas in reality the data showed that these elements are inter-dependent. Instead the account is structured in a way that echoes the narratives – beginning with initial motivation for using technology in feedback and ending with a consideration of the perceived impact.

The account is organised in to the following sub-sections:

- **Institutional context and participant information**: The initial section offers a summary of each lecturer’s use of technology and some key biographical details for each participant. Some insights in to the reflective modes of practitioners are also offered. This summary is not intended to be an exhaustive representation; a sense of each participant can also be gained through the vignette extracts and by reference to the example narrative at Appendix 3 and the published narratives (offered by Arnold, 2014a).
• **Motivations, beliefs and concerns of lecturers:** This section shows the deliberative processes and decision-making experiences of participants. It details how individuals come to reach decisions about their feedback practice and particularly the utilisation of technology. As well as practical concerns, this section examines underlying beliefs about both technology and feedback.

• **The institutional landscape:** This section further explores the socio-cultural dimensions of the practice setting which give rise to, or which enable or constrain different forms of practice. This part of the findings also looks at some of the tensions within the institutional setting which exist between lecturers with different approaches.

• **Impact:** The penultimate section exemplifies how lecturers believe their practice is having an effect on themselves, their students and the university.

• **A final summary** then draws out key points in direct response to the research questions. The discussion returns to Archer’s ideas of the internal conversation, and the interplay of structure and agency to allow the findings to be understood more deeply. Within the summary a diagrammatic model of practice formation is coined.

**Institutional context and participant information**

Robson University is a small specialist agri-food institution in England, with around 2700 undergraduate and postgraduate students. In Berquest and Pawlack’s (2008) terms the institution has a managerialist and tangible culture, with a strong emphasis on the physical environment³. Disciplines include veterinary sciences, engineering, agriculture, business, environmental sciences, and food science. In the organisation of teaching and learning there is a strong emphasis on modules, which typically have two pieces of assessment including a piece of written coursework and an exam. As a result of professional accreditations, modules often contain practical assessments as well as academic assessments. This can result in a high assessment load,

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³ This was revealed in an earlier study module where Berquest & Pawlack’s inventory was completed for Robson University.
with up to twenty-six summative items of assessment for a student across the academic year.

The university has a coursework submission policy requiring an electronic hand-in via a “Turnitin” drop-in box, which is located in the institution’s virtual learning environment and a paper submission by hand-in, to a staffed office. The electronic submission enables text-matching software to support the university’s plagiarism detection policy.

For the last three years the institution has promoted technology use in assessment, feedback and grading, through invited speakers, internal pilots and the e-learning team’s advocacy. The range of technology in use for the purpose of feedback is described at Table 5.1. Individuals within the study utilise different combinations of this technology, as summarised at Table 5.2. Throughout this chapter the term context refers specifically to the site of practice and all of the associated norms and cultures that exist therein.
Table 5.1 Technologies used by participants for feedback in the research

<table>
<thead>
<tr>
<th>Technology description</th>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Microsoft Word</td>
<td>Overview</td>
<td>Microsoft Word is a widely accepted format for student coursework submissions. The software is native to the institutional network and is thus accessible to all staff and students. To access the work in this format staff must download each assignment from the Turnitin drop-box. There is no facility to re-upload the work once feedback has been added and so lecturers must either individually email or print the work with comments or changes.</td>
</tr>
<tr>
<td></td>
<td>Word (Comments feature)</td>
<td>Within the Microsoft Word software, lecturers add comments to a student’s work. Comments are in close proximity to the area within the student’s work to which they relate and are linked by ‘dotted line’. Sometimes comments are associated with comment banks where lecturers develop a list of frequently used points and then either copy and paste them as comments or using ‘quick keys’ semi-automate the process of inserting pre-made comments. The latter approach was a more sophisticated use of the comments facility.</td>
</tr>
<tr>
<td></td>
<td>Word (track change)</td>
<td>Within the Microsoft Word software, lecturers make suggested changes to, or write comments on, students’ work. The track change facility shows these changes in colour to make them stand out from the usual black text of assignments. Where the annotation is a suggested change students can accept or reject the suggestion upon receipt.</td>
</tr>
<tr>
<td></td>
<td>Word processed feedback</td>
<td>Lecturers use Word to simply type their feedback. Some will type on to the template that is associated with paper submissions (and which is available for staff to download) whereas others simply type using their own format.</td>
</tr>
</tbody>
</table>
### Jing

**Jing screen capture**

Jing is a free, downloadable application, made by a company called Techsmith. It can be installed to a computer to record the contents of the screen or part of the screen. The product enables lecturers to record a commentary while highlighting areas of a student's assignment on screen. Some lecturers pre-read the assignment and plan their comments, some script their narrative while others speak as they read. Once a recording is created it is uploaded to a cloud space, recommended by the company that developed the product, and a web link is added to the clipboard of the creator. This link can then be sent by email to the student. Some tutors use Jing for one-to-many feedback, and paste the web link to the video in to the virtual learning environment for all students to access. The maximum video length is five minutes. Jing is not yet available on mobile devices. An invited speaker introduced Jing to the institution, during a workshop in 2012.

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### GradeMark

**Overview**

Turnitin is a hosted service that contains various facilities including text matching, originality reporting and tools for both tutors and peers to provide feedback and grades to students. The set of tools for tutors to grade and provide feedback are within the GradeMark element of the service. Formative use of Turnitin is not permitted at Robson University, so use of GradeMark refers always to summative assignments.

All students submit coursework to Turnitin and so any tutor wishing to utilise any of the services available through GradeMark does not need to ask the students to do anything different. Students do need to return to the drop-in box to collect the feedback and grades left by the tutor. By contrast work marked by hand is returned through a central office, where students collect their work on a published date. An informal pilot of GradeMark was undertaken in 2012-3 wherein around 12 tutors trialed its use.

**GradeMark quick marks**

Within GradeMark markers are able to create and use comment banks called "quick marks". Comments from the bank can be dragged and dropped on the work, in close proximity to the issue being referred to. Comments can be stored and reused, and they can be extended for individuals, to add a degree of personalisation if required. Comments can be organised in to sections, folders and can be colour coded thus allowing users to organise their own ways of working. A bank of generic comments relating to structural aspects of feedback exists already when users log in. These can be adopted, ignored, deleted or changed. Comment banks can be exported and emailed between users to enable sharing of comments.

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4 Available at [www.techsmith.com/jing.html](http://www.techsmith.com/jing.html)
<table>
<thead>
<tr>
<th>GradeMark inline comments</th>
<th>Markers are able to use comment bubbles to type feedback on to assessment work and align the feedback with an appropriate point on the assignment.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GradeMark rubric</td>
<td>The GradeMark interface supports rubrics but use of these is optional. Rubrics act as a semi-automated form of marking and provide a mechanism for student feedback. The tutor creates a rubric by setting out the marking criteria and populating the rubric grid with a description of the requirements of student performance for the attribution of different grades. The rubric can be created within the online system or it can be uploaded from a spreadsheet. When marking the tutor selects the categories in the rubric that apply to the student’s work. Some tutors opt to use the rubrics in a way that automatically calculates a final score based on the categories selected. This automation always assumes the mid-point score from within any selected decision. Those using a rubric can override the calculated grade if they wish to use more granular judgment.</td>
</tr>
<tr>
<td>GradeMark summative comments</td>
<td>As well as comments on the work, GradeMark provides a simple text box for overview remarks. The open text field is similar to the institutional feedback form.</td>
</tr>
<tr>
<td>GradeMark audio</td>
<td>Located on the same screen as the summative comments box is an audio recorder button, whereby the user can record a three-minute audio clip which can be played back by the student.</td>
</tr>
<tr>
<td>GradeMark iPad</td>
<td>GradeMark is available through an iPad tablet as well as through a computer’s web browser. By contrast to the browser, the iPad version allows all papers to be downloaded and worked on off-line, giving a level of portability not available through the other means. Staff at Robson University may use the iPad version on a personal device or on a university device. 2014 is the first year this facility has been available and thus protocols for usage (who will download the papers, how is an iPad secured and other questions) are yet unclear.</td>
</tr>
<tr>
<td>PDF comments feature</td>
<td>Using Adobe’s PDF reader, lecturers can add comments and notes on to a PDF document. This software is pre-installed on all institutional computers and so there is no set up requirement. Annotated assignments need to be either printed or emailed to students.</td>
</tr>
<tr>
<td>Pebblepad</td>
<td>Pebblepad e-portfolio was introduced to Robson University in the summer of 2013. Pebblepad was launched as a pilot to establish whether staff and students would find it valuable as a complement to existing tools for reflection, feedback and working with multimedia formats. Pebblepad allows teachers to leave feedback on student work. Others can view the feedback if the student user sets up their permissions to allow this. This system can’t export marks to the student record system.</td>
</tr>
<tr>
<td>Name</td>
<td>Feedback technologies used</td>
</tr>
<tr>
<td>-----------</td>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td>Donna</td>
<td>GradeMark (rubric, quick marks, summative comment)</td>
</tr>
<tr>
<td>Chris</td>
<td>GradeMark (rubric, quick marks, summative comment)</td>
</tr>
<tr>
<td>Ruth</td>
<td>Word (comments feature) Word processed feedback Jing (one to one) Jing (one-to-many)</td>
</tr>
<tr>
<td>Angela</td>
<td>GradeMark (rubric, quick marks, summative comment) Pebblepad</td>
</tr>
<tr>
<td>Phillip</td>
<td>Word track change Word (self made quick marks) GradeMark (rubric, quick marks,) GradeMark (rubric, quick marks,)</td>
</tr>
<tr>
<td>Name</td>
<td>GradeMark (rubric, quick marks, summative comment)</td>
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<tr>
<td>--------</td>
<td>---------------------------------------------------</td>
</tr>
<tr>
<td>Flynn</td>
<td>Word</td>
</tr>
<tr>
<td>Marcus</td>
<td>PebblePad</td>
</tr>
<tr>
<td>Anna</td>
<td>GradeMark</td>
</tr>
<tr>
<td>Margaret</td>
<td>GradeMark (rubric, quick marks, summative comment)</td>
</tr>
<tr>
<td>Ellie</td>
<td>GradeMark (iPad)</td>
</tr>
<tr>
<td>Name</td>
<td>Feedback comments</td>
</tr>
<tr>
<td>---------</td>
<td>-----------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Greta</td>
<td>None. Feedback is handwritten. One previous occurrence of trying audio feedback (no further use undertaken)</td>
</tr>
<tr>
<td>Malcolm</td>
<td>None. Feedback is handwritten</td>
</tr>
</tbody>
</table>
**Reflexive mode**

Participants can be distinguished according to their main mode of internal conversation, as well as by their technology usage. Reflexive processes were illuminated through the interviews, particularly by examining the nature of individual concerns, priorities, deliberations and social engagement. The taxonomy of internal conversations that was formed is outlined below at Table 5.3. Categories did align very closely to Archer’s types of internal conversation, but rather than referring to life decisions the detail is focused on practice formation. This represents a translation of Archer’s typology. It is important to note that the reflexive mode was the only predefined area of coding in the categorising analysis; other substantive codes were entirely generated by the data, in conjunction with the research framework. The reflexive mode codes were structured around Archer’s (2003) existing ideas because they offered a ready-made typology of internal processes. Nevertheless the codes were not accepted unconditionally, one observable difference between these categories and Archer’s is the inclusion of ‘global-meta’ rather than solely ‘meta’. This slight modification reflects the point that members of this category had a more outward looking awareness of other practices, within the institution and beyond, and these insights fed in to their own deliberations through comparison. Also, there was no evidence of staff operating via a ‘fractured’ internal conversation in the way that this term is used by Archer to illustrate turmoil and disjointedness.
<table>
<thead>
<tr>
<th>Category</th>
<th>Characteristics</th>
<th>Members</th>
<th>Example vignettes associated with the category code within the connecting analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global-meta</td>
<td>Reviewed own practice in a self-regulatory manner;</td>
<td>Donna, Ruth,</td>
<td>“Because you just got to keep thinking, well you’ve just got to keep thinking</td>
</tr>
<tr>
<td></td>
<td>Constantly revising practices;</td>
<td>Phillip, Ellie,</td>
<td>haven’t you? And asked why, why is [feedback] not working, why did it work with</td>
</tr>
<tr>
<td></td>
<td>Critical and emergent in practice;</td>
<td>Anna, Greta</td>
<td>last year’s group but not this year’s” (Donna, showing constant self-review and</td>
</tr>
<tr>
<td></td>
<td>Reflected on institutional change as well as personal changes needed for</td>
<td></td>
<td>revision).</td>
</tr>
<tr>
<td></td>
<td>advancing practice;</td>
<td></td>
<td>“I think there are some champions here. We’ve got some really good staff</td>
</tr>
<tr>
<td></td>
<td>Experimental with practices;</td>
<td></td>
<td>supporting it. But I think the trailblazers need to be recognised really, that</td>
</tr>
<tr>
<td></td>
<td>Reflective in the light of new information;</td>
<td></td>
<td>this is good practice” (Ruth)</td>
</tr>
<tr>
<td></td>
<td>Likely to devote significant time to advancing practice;</td>
<td></td>
<td>“There’s not any institutional reason to engage, it’s purely, and maybe that’s</td>
</tr>
<tr>
<td></td>
<td>High levels of awareness of different practices within the organisation and in</td>
<td></td>
<td>the right way, I don’t know, maybe it is about responding to students’ needs,</td>
</tr>
<tr>
<td></td>
<td>other institutions.</td>
<td></td>
<td>responding to what is appropriate for my type of teaching, recognising we’re</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>not all clones of each other” (Ellie).</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>“I think [GradeMark] could do more. And we can integrate it somehow, with the</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>bank of comments…my ideas going on up here [points to head], I don’t discuss</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>things like that unless I’ve got it all sorted out in my mind, to be honest”</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(Donna)</td>
</tr>
<tr>
<td>Category</td>
<td>Description</td>
<td>Examples</td>
<td></td>
</tr>
<tr>
<td>---------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Communicative</td>
<td>Developed own practice primarily through links with others; Sought ideas from others and validated actions through communicative approaches; Unsure of the best way to proceed without engagement; Strongly influenced by others.</td>
<td>&quot;Well June and I have designed two sets, what we call banks of comments now. We’ve got lots of comments that relate to specific parts of the assignment. …We sort of designed a bank of general comments which we would write all of the time anyway&quot; (Chris). &quot;She thought it was a good thing, I thought I’d give it a go. It might be brilliant; it might be useless…I don’t know. For what we were doing with their feedback, they thought it was the right package at the time. So, glad we gave it a try, I suppose&quot; (Marcus).</td>
<td></td>
</tr>
<tr>
<td>Autonomous</td>
<td>Motivated primarily by external factors or specific goals; Clear of the limitations of practice (boundaries) and how much time out to be associated with activities; Innovation is associated with specific rather than speculative ends; Communication fuels the matching of needs to technology-based solutions; A tendency to reflect on own practice without reference to institutional change.</td>
<td>&quot;I do still think there is a lot to be said to be able to quickly mark, especially when there is the same mistake is repeated throughout that [assignment]&quot; (Flynn). &quot;I find that just isn’t the time to get your head around trying to do something in a more super duper, exciting way for young people, when you, you know, you’re trying to get the lectures done, trying to get the marking done, trying to get that sort of stuff across” (Margaret).</td>
<td></td>
</tr>
</tbody>
</table>
These categories are used throughout the findings as a backdrop to the consideration of mediation and reflexivity in practice formation. The categories are not mutually exclusive: being goal driven for example does not preclude some behaviours associated with communicative modes of reflection. The attribution of individuals to categories describes their dominant mode only.

**Motivations, beliefs and concerns of lecturers**

The account now considers lecturers’ initial motivations for employing technology in the creation of feedback. It explores underlying beliefs and attitudes, and highlights issues contemplated by lecturers as they deliberate practice. The terms employed here (motivation, beliefs and concerns) were all a product of the coding process. For example ‘motivation’ was an organising rather than a substantive category that grouped together any indication by participants of why they began to become interested in, or to engage with, technology for feedback. Within this organising ‘bin’ substantive categories including legibility, distance learning and accessibility were identified from the open coding process.

**Initial motivation**

When lecturers first use technology for feedback they were sometimes trying to address specific issues. These trigger issues were attributed by participants as ‘the reason’ for adopting particular practices. Flynn and Margaret tried to improve the speed of production of summative feedback. Lecturers’ opinions on whether technology saves time in feedback were mixed, but the hope of time gains was important for some. Anna and Ellie needed to provide feedback at a distance as a result of new programmes being developed. Others, including Angela, Margaret and Chris pursued improvements in feedback access because it was connected to their beliefs about ‘good’ feedback for all students. Access is an example of a motivating factor that can be generated by an immediate practical need or which is one part of a wider set of beliefs about feedback. Vignettes from the data show Flynn’s time based rationale, Ellie and Anna’s change in student need and Angela’s emphasis on accessibility:
• “We seem to be spending our lives marking and I think we have really got to get the message across to folks that there are ways and means of reducing that marking burden … it's entirely selfish. I don't want to spend Christmas marking” (Flynn).

• “I started because I realised I had to do something with the [ABC company work based learners] because they were distance” (Ellie).

• “in this department, a lot of us have distance learners, and they're quite keen on doing it this way … some of the students are being miles abroad. I've got people that are in South Africa … and say, you know, it can take weeks for them to get something”. (Anna).

• “I think because it's available 24/7, so students can access their feedback as and when they want it … you hope that when they come to do their next piece of work, it’s instantly available to them, they know where it is” (Angela).

Legibility acted as a primary trigger for Marcus and Phillip. For others, including Anna and Margaret, legibility improvement was a benefit of using technology, but was not the main driver. The different role of legibility as a driver is captured in the following vignettes:

• “I have used electronic feedback from the outset simply because my handwriting's not good enough and I recognise that” (Phillip).

• “I now type it because my handwriting isn’t very good” (Marcus)

• “they’ve had it posted back to them with my, probably indecipherable, handwriting a lot of the time” (Anna)

• “you can annotate more on the text then you could do on a written piece of work in a legible way… so hopefully that makes it easier” (Margaret).

In noting the existence of principal motivational factors within each individual’s story it is important not to overstate the role they play, as without exception lecturers’ decisions to engage were spurred by a range of reasons, forming a dense rationale.
Lecturers observed particular needs amongst specific groups of students that could be addressed through technology. Chris recognised international students adjusting to the requirements of UK higher education who would benefit from more clarity around standards. Accordingly, Chris and colleagues sought approaches to feedback that were linked to clear expectations and grade judgments and they turned to electronic rubrics.

Ruth recognised that “it's important I think to address the needs of visual learners, aural learners, oral learners and the different learning styles” and her corresponding action was to experiment with media formats for formative whole group feedback to try to engage students whom she perceived as less reachable through text. Chris’s concerns here were born out of discussion with others, whereas Ruth’s concerns were more individually stated.

Marcus and Flynn noted the valuable role that technology can play in managing feedback in an age of accountability. As students and colleagues seek clarification, electronic versions of feedback can be readily accessed and can provide an audit trail of decisions about assessment. Margaret cited the perceived opportunity to provide more feedback or feedback which signposts resources as being important to her rationale for engagement, while Ellie described pedagogic research that she had encountered as being important to her decision to engage.

The connecting analysis suggests that each part of the tutor’s rationale is a manifestation of a multilayered experience between different strata and a product of a lecturer’s mediation of their own context. Table 5.4 below illustrates this. Causal mechanisms are noted in italics. These cases are selected to illustrate a range of factors at work across different deliberative modes (all three reflective types are represented). Exemplifying the layering associated with the three primary triggers for practice reveals some of the forces at work in the real domain.
### Table 5.4 The origins of trigger factors for three lecturers in the study

<table>
<thead>
<tr>
<th>Strata</th>
<th>Marcus</th>
<th>Anna</th>
<th>Flynn</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real</td>
<td>Fee environment changes lead to a perception that students have higher expectations of service. The quality environment attributes great importance to formal feedback. Institutions are conscious of feedback through performance data and therefore promote associated continuing professional development, this in turn can be linked to marketisation.</td>
<td>A more diverse student population is emerging to challenge existent ways of working. The expectations of students working flexibly are high. Accessing study in a range of ways has been normalised.</td>
<td>Workload increases associated with employer engagement (income diversification) and rising student numbers. Student expectations of technology are inferred by a ‘push’ in the actual strata, to use this.</td>
</tr>
<tr>
<td>Actual</td>
<td>Engagement on a CPD course raised consciousness to higher feedback expectations. Enacting the quality landscape feedback from external examiners reinforces the value of legibility.</td>
<td>Difficulties with return times to distance students are experienced using existent processes, and access to feedback, amongst remote students is not deemed satisfactory. Anna’s interpretation of what is satisfactory is based on expectations generated from prior experience.</td>
<td>An increased workload is experienced. There is pressure within the department to use innovative technologies manifesting.</td>
</tr>
<tr>
<td>Empirical</td>
<td>Legibility is perceived as a way to better meet student expectations and to fulfill quality requirements.</td>
<td>Sense that students require more flexible access to feedback triggers changes to practice.</td>
<td>A pressure to produce quicker feedback, and technology-enhanced feedback is experienced and is compounded by diverse roles.</td>
</tr>
</tbody>
</table>

Among these cases each individual comes to be aware of the trigger factor through means that align with their reflective mode. Marcus is alerted through training and colleagues; Anna reviews her practice and finds it unsatisfactory, her own recent experience as a student frames her concerns and aspiration for improvement; Flynn feels pressure as increased workload spills into his personal life. He therefore responds rationally to seek efficiencies, though the means to do this appears to be aligned with imposed requirements for
technology use. Initial motivation is derived from interplay between goals, beliefs, context and the reflexive mode.

In summary, project triggers vary from person to person, and a primary trigger for one individual may be a contributory factor to another. Motivating factors relate to identifiable deficits in practice with which technology may help, or they relate to the realisation that pedagogic values can be better enacted through the adoption of technology. Rogers (2014) recognised that innovation happens in response to arising needs; the data shows that needs manifest as a single event or as a convergence of events and beliefs. These needs come to be in the conscience of the lecturer by a change in circumstance e.g. changing the mode of delivery, or through a more subtle sequence of realisations caused by events in different strata, which bring recognition that change is desirable; this process is like an awakening. Geoghegen’s (1994) suggestion that a lack of a compelling reason to buy-in to technology may slow down its acceptance amongst faculty was reinforced by a single case; Greta claimed that she did not have issues with which technology could help. This led not to a rejection as such, but to a scenario in which there was no reason to gravitate to technology.

Feedback orientation
Different and multifaceted beliefs about feedback were evident in participant accounts. All lecturers in the study explicitly recognised the importance and potential power of feedback for learning. For example:

- “if we don't give feedback, we are failing as educators” (Ruth)
- “I think it’s probably the most important thing. Because I think that, something I found lacking, and it’s not a criticism of having gone through the course here, it’s a criticism of being at four unis doing various things and feedback generally is pretty poor” (Anna).
- “In my teaching it's, I've always considered it an important part of the teaching process, of the learning process of the students…To some extent I certainly think most of the students learn something from it, either what you write, or when they come and try and speak to you about an assignment, and you can try and explain what your feedback actually means” (Malcolm).
Tang and Harrison (2011) found some areas of convergence in the feedback views of teachers in higher education, but this particular point was not detected in all of their cases. A unanimous shared belief in the importance of feedback should be viewed with caution, recalling that narratives can be fashioned to the audience and they can be subject to officialisation where the dominant discourse is adopted (Czarniawska, 2004). My own role is associated with the advocacy of feedback and this embodies the institution’s pro-feedback stance, it is therefore entirely plausible that my own position motivated the claims that individuals subscribe to the idea that feedback is important and powerful.

The distinction between ongoing, spontaneous feedback, what Kahu (2008) calls informal feedback, and more formal feedback was widely made as individuals described their beliefs, thus reinforcing this as a meaningful operational distinction. All, except Greta, placed high importance on both formal and informal feedback. Greta believed that feedback is important but only as an on-going process that is inseparable from learning; she explained her view that feedback, as a final product, is over-rated and driven by external requirements:

“I think the reason why there is so much focus on feedback is due to the NSS [National Student Survey] and quality assurance so I think there is this push from above and I think perhaps the student and what the student wants is being forgotten and I sometimes think the students don’t want the feedback” (Greta).

All lecturers recognised that feedback was a complex business. They were often uncertain about the extent to which students used feedback, and lacked confidence in their explanations for why feedback was not always used. Reasons were thought likely to include: differing student goals, differing grades, diverse prior schooling experiences and particularly the extent to which students had been taught to assume responsibility for their own learning, differing parental attitudes and levels of personal diligence. Illustrative vignettes to show the uncertainty around student usage are shared:
• “Some students are wanting to learn and do take on board the feedback and I've been thanked me for it and, say it's very clear how to make it better next time. Others it's quite clear that they haven't used the feedback” (Phillip).

• “It really depends on the type of sixth form they have been in. If I can give you two extremes. They might have been to a sixth form college that is a continuation of school, so they have had their hand held virtually and they have been very closely monitored … and then you have the type of student who has been to a sixth form college which is independent where they have had a lot of free time so they have got to make their own way. … they actually pick up on those clues and they have a strategy in place in how to deal with things. I find the students who have gone from school to a sixth form in school are actually at a disadvantage because I think to use feedback and to use it well you have got to have a certain independence and independence of thought and some sort of idea of where you are going”. (Greta).

• “I've also had a look to see do students actually read feedback or do they look at the feedback and… a good fifty plus per cent within a week of submitting their, of me getting back their feedback have actually accessed it. How much they've taken in of course is open to a question” (Angela).

• [How the students use feedback is] the million-dollar question. It's variable. I know from speaking to students about this, some do really value the feedback but it depends on how it's presented to them. And it depends on lots of other things like the mark they get, whether they like the module, whether it's an area that they want to extend in future, and they want to do really well in that module because, that's taking them in a direction. So I think it's incredibly variable. There are some students who, even if they get fantastic feedback, still wouldn't take any notice of it. They're still only interested in the mark” (Ruth).

Lecturers dealt with that uncertainty in different ways; some had an apparent acceptance of the situation (Margaret, Angela, Greta, Philip, Chris). In the
vignettes below it is clear that the lecturers simply press on despite the complexity but with an understanding that their actions may never be enough. The aspects of the vignettes shown in italics particularly lead to the conclusion that there is a sense of acceptance about how much can be done by the tutor:

- “hopefully it's enabling the students to see, usually where they've gone wrong I suppose, what they could have done better. I suppose, and balance it a little bit, so you’re giving them some positive feedback, as well as criticising the negative, that can sometimes be a bit challenging. Because some of them don’t seem to make much of an effort, I just try to help the students learn, and hopefully benefit from that in the next piece of work they do” (Margaret).
- “You hope that they look at it and from the students that I see, yes, some of them come and see me and ask, why. But generally, I think in terms of the bigger percentage, probably don't. I don't see them so I guess we rely on them to look at it and read it and take it on board” (Chris).

Others showed great frustration with the factors that were beyond their influence (Donna, Ruth).

- “we as a department to spend a lot of time writing feedback. But what’s the point if they're not going to use it they moan that they don’t get it, but he never moan that they don’t use it. Difficult” (Donna)
- “Actually I was asking [my students] today, and I said what you do with your feedback, do you go and discuss feedback with your lecturers, and generally they said no. Unless, there was one today who said he was going to go and discuss it. He’d actually failed his assignment and he didn't know why. With [research methods module] last year I was actually checking up on a student … And the work he’d handed in … I compared it to last years [work] and his referencing was exactly the same as it was last year which said to me he's not even bothered reading his feedback and it's probably the most important thing as lecturers we can give, you know because it’s got to improve course wide, academic writing is academic writing and they should be
undertaking in the whole programme. So why aren’t they using that feedback? why don’t see it as being very valuable?” (Donna).

Amongst these reactions a number of staff identified hope that students would sometimes use the feedback (for details of who held this belief see the ‘feedback optimism’ column in Table 5.5). These findings reinforce Tang and Harrison’s (2011) recognition of a widespread lack of understanding about how students use feedback, and the findings build on Tang and Harrison’s work by locating different agential responses to this lack of clarity. Higgins, Hartley and Skelton (2001) suggested that feedback should be treated as a more holistic practice, which recognises the identity of both teacher and student. The recognition here that teachers’ feedback beliefs are not only variable, but are also mediated differently, adds to the case for a deeper consideration of teacher values in any consideration of feedback.

Some lecturers believed that the quality of their feedback was an important influence on student use. This belief strand is labeled ‘tutor influence’. Malcolm illustrates this belief: “If you put some time and effort into your feedback, the students will put some time and effort into looking at it, and making use of it”. The combination of feedback optimism (the ‘hope’ the feedback would be used) and a belief in tutor influence appears to provide conditions in which lecturers have some confidence that an investment in feedback is worthwhile. Amongst those with this belief combination, technology was seen as a way to reach into an optimistic space. Views on how to use of that space varied. Ruth for example wanted to use appealing media, Anna wanted to engage students in an accessible way, while Donna and Ellie routinely questioned their own use of technology to see how it might better engage students; they tried a range of actions with technology. I have labeled this set of beliefs the ‘student-centric realist feedback orientation’.

Price et al. (2010) detected that lecturers live with the constant contradiction between students’ claims that feedback is hugely important and their sense that students don’t make good use of feedback. Participants with a student-centric realist feedback orientation stepped back to consider whether their own actions, through technology, can make a difference. None of them gave
up the idea of having to live with the contradiction, but they did locate some space to exercise influence. The impact of their actions, on student use of feedback, is beyond the scope of this research.

A second feedback orientation was characterised by lecturers’ beliefs that they have responsibility to give good feedback, irrespective of whether it is used. In principle lecturers saw feedback as important, but they doubted their ability to make any difference to student use. These individuals were driven by a sense of professional obligation rather than a belief that their feedback will make an impact. Technology for these individuals, labeled as the supply-side feedback practitioners, was about enhancing the quality of the feedback delivered.

“[high quality feedback is] what I’m paid to do, so I suppose I just see it as being part of the job…It’s a bit like standing up in front of a room that should be full of twenty students and only has eight students in it, and you think, well, why am I bothering?” (Margaret).

“you tend to throw it at them. You don’t know whether they use it…Well you are giving them their money’s worth” (Marcus).

It would be unfair to label this second orientation as devoid from student concern; all lecturers showed for concern for how students engaged with their feedback, but there was a sense that no matter how practice was changed, most students would still not use the feedback. Deci & Ryan (1985, 1991 cited by Vallerand & Others, 1992) describe that professionalism can be aligned with external expectations, here this materialises in the idea that feedback is part of the job, or it can be associated by a personal sense of pride and satisfaction when an individual has internalised external professional norms. In Marcus’s case (shown in Table 5.4.) the student fee and his recognition of increasing student expectations give rise to a greater prominence of these external expectations. It is tentatively posited that the supply-side orientation could be associated with external motivation.

The desire to achieve satisfaction with feedback that was produced was not the exclusive domain of the second group described, it was possible to be
concerned for student use and concerned for professional standards. Phillip, for example, was highly reflective on student use and wanted to provide comprehensive feedback, but at the same time was hugely concerned about the quality of his own product as a professional standard. Individuals with a balance of supply-side and student use concerns are labeled ‘student centric professionals’. Features of the feedback beliefs of each of individual members of the study are detailed at Table 5.5. The labels in the table relate to the previous text.
<table>
<thead>
<tr>
<th></th>
<th>Formal feedback</th>
<th>Uncertainty of student use</th>
<th>Feedback optimism</th>
<th>Recipient realism</th>
<th>Tutor influence</th>
<th>Supply side focus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Donna</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<td>Chris</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Ruth</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Phillip</td>
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<td>X</td>
<td>X</td>
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<tr>
<td>Marcus</td>
<td>X</td>
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<td></td>
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<tr>
<td>Angela</td>
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<td>Anna</td>
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<tr>
<td>Flynn</td>
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<tr>
<td>Margaret</td>
<td>X</td>
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<tr>
<td>Ellie</td>
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<tr>
<td>Greta</td>
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<tr>
<td>Malcolm</td>
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</tr>
</tbody>
</table>
Tang & Harrison (2011) proposed three feedback orientations: Traditional–autonomous–global, student-centred and traditional local. Within Tang & Harrison’s work, the idea that tutors have limited confidence that students use feedback was restricted to the two traditional categories as the student centric perspective did not make reference to the limited use of feedback made by students. By contrast the data at Robson University shows that student centeredness is not necessarily associated with unconditional optimism, but rather is linked to the recognition that the tutor can make a degree of difference. The findings also introduce a new type of feedback orientation, which is dependent on professional identity and professional obligation. In Greta, it also highlights a perspective that regards feedback as less about a product and more about a process.

A summary of the newly formed feedback orientations is offered in Box 5.1 alongside Tang and Harrison’s categories. Placing the feedback outlooks together in this way is to make clear similarities, and differences and new contributions. The hybrid category observed in the data (a mix between the student centred realist category and the supply side orientation) is not included, as it is not intended that these categories are fixed and exclusive.
### Box 5.1 Feedback orientations located in this research shown alongside Tang and Harrison’s (2011) categories of feedback beliefs

<table>
<thead>
<tr>
<th>Orientation</th>
<th>Beliefs</th>
</tr>
</thead>
</table>
| i. Traditional–autonomous–global (TAG) | - Tutors have a limited confidence that students use feedback  
- Tutors do not engage with colleagues on feedback  
- Tend to feedback on higher order ideas rather than minutiae. |
| ii. Student-centred (SC)       | - Tutors believe that good tutor feedback guides improvement  
- Tutors believe all students needed tutor feedback  
- Tutors offer suggestions for the development of assignments. |
| iii. Traditional-local (TL)    | - Tutors have limited confidence that students use feedback  
- Tutors tend to feedback on detailed points relating to report structure and use of language |
| iv. Student-centric realist (SCR) | - Tutors believe that good tutor feedback guides improvement  
- Tutors have confidence that some students use feedback  
- Tutors believe the quality of feedback makes a difference to some student’s engagement |
| v. Supply-side (SS)            | - Tutors believe that feedback has the potential to influence learning  
- Tutors have limited confidence that students use feedback and limited confidence in their own power to affect student engagement  
- Tutors believe the quality of feedback is an important professional responsibility irrespective of whether students use it |
| vi. Feedback as process (FP)   | - Tutors believe on-going, dialogic that feedback has the potential to influence learning  
- Tutors have limited confidence in officialised formal feedback by comparison to on-going forms of feedback |
The rationale for using technology becomes clearer through an appreciation of individual feedback orientations. Still, it does not follow that having a specific orientation causes technology engagement. Malcolm was concerned with professional standards and believed in the power of formal feedback, but did not turn to technology. The reasons for this are not rooted in his feedback orientation, but in his technology orientation and his professional identity and goals, these themes are explored next.

**Technology orientation**

The portraits and codes revealed that lecturers’ relationships with learning technologies fit into three characteristic groups, shown in Table 5.6. The groups range from active ‘technophiles’ who seek out technology and who have an intrinsic pull to utilise technology, to lecturers who in no way seek technology, but who are open to engagement with it. In the centre of the spectrum is a group who do not consider themselves ‘techies’ but who will selectively use technology as time allows and as need arises. This classification is an embodiment of attitude and outlook, as well as the range of tools employed. It provides a temporal snapshot of academic profiles, which is complementary to Roger’s (2003) temporally transient theory of innovation diffusion.
<table>
<thead>
<tr>
<th>Group</th>
<th>Tech-hunters</th>
<th>Have a go-ers</th>
<th>When it really matters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phrases from the data capturing the essence of the group</td>
<td>“Self-sufficient” (Phillip) “I love computers” (Donna)</td>
<td>“I’m not a techie but…” (Angela). “I’m not that adventurous” (Ruth). “I went to the training for that and I’m willing to use it when I next time I need to do it” (Angela).</td>
<td>“I am a bit of a dinosaur” (a phrase used by three of the participants – Malcolm, Greta and Marcus)</td>
</tr>
<tr>
<td>Usage</td>
<td>Natural interest in technology; Utilises technology wherever it is beneficial, and sometimes experimentally; Invests time in locating tools and developing usage; Has an intrinsic passion for technology and is excited by the possibilities it presents.</td>
<td>Interested to use technology where it makes a difference; Inspired by other colleagues within their network; No natural pull to technology but prepared to ‘give it a go’ but may lack confidence; Time to set up and relative benefits are prominent concerns.</td>
<td>Not intrinsically interested and relies largely on technology free teaching methods; A very clear rationale for usage is required; Technology acts as a slave to need; Technology is considered as a low priority amongst pedagogic options.</td>
</tr>
<tr>
<td>Self-perception</td>
<td>Technically capable and largely self-sufficient; Employs a variety of approaches to develop skills, especially independent research. Self-identity associated with technology use.</td>
<td>Technically ‘OK’ but doubting of skills compared to others; Necessarily discriminate in the choice of technologies employed.</td>
<td>Technically challenged and relies on traditional low-tech approaches across practice. Academic identity in no way underpinned by learning technology. Highly discriminate usage.</td>
</tr>
<tr>
<td>Social practices</td>
<td>Limits requests for help to specific technical issues; Cited by others as a reference point for advancing practice and limited citation of other colleagues.</td>
<td>Welcomes the opportunity to learn from others particularly to inform choices about which technologies are worth pursuing.</td>
<td>Close links to other colleagues are essential in progressing the adoption of technology.</td>
</tr>
</tbody>
</table>
Phillip, Anna and Donna describe themselves as technically capable, motivated and engaged. In practice they combine their technophile status with their global-meta reflective approach wherein they examine and re-examine practice as new tools become available and as new issues arise in practice. Their practice appears to evolve and a continual cycle of review and renewal is in place. Moreover their horizon scanning activities give them more technology options as issues arise. Those in the middle group, who are prepared to use technology, though in more discriminate ways, range in their reflective approach and personal priorities. Flynn targets attention to tasks which will help him fulfill his academic department’s goal of broadening technology use and his personal goal of efficiency, whereas Ruth applies technology to impact student engagement with feedback, while Chris selects his priorities for technology usage through engagement with colleagues.

The reasons for individual inclusions in the category ‘When it really matters’ were mixed. For Malcolm his academic identity and personal goals did not relate to technology, he saw technology as distracting and at odds with other aspects of the academic role:

“There's only so many hours in a day and you've got to make decisions about what you're going to do with those hours and what's going to be best for both your students and for yourself and your career…I think some colleagues have got kind of drawn into IT, and they do a lot of work with IT, but then five years later, they're wondering why they've not been made [Principal Lecturer], and it's because they've not been putting time into the other main function, as I see it, of being a lecturer, which is not just the dissemination of information, it's also the generation, through research as well” (Malcolm).
Malcolm indicates a clear and stable identity, which is holding firm amongst competing pressures. He recognises that his position may not be in keeping with the management’s espoused emphasis on technology in teaching; but he also observed that in reality, he believes precedence is given to research in determining career progression. Malcolm’s preparedness to invest in becoming familiar with different technologies was reduced by his perceptions about the pace of change, within the university and in wider society:

“IT is rolling on so fast, and I think that the rate of development is so great, that this is why I’ve been a bit loath to engage with it any more at the moment, because, I just know, in 12 months’ time whatever I’ve learned about a program will be out of date”.

As a related point Greta’s own perception of her age and proximity to retirement work to deter her from engagement as the return on the investment of time would be small. This reinforces Opre, Zaharie, and Opre’s (2008) findings that career stage is important in the decisions lecturer’s make with technology. Others, including Marcus, Flynn and Angela, noticed the pace of change but strove to keep up; Malcolm and Greta’s stances again suggest that individual beliefs and values and attributes are key to how forces in the real strata are mediated.

Malcolm also identified aspects of the institutional culture that have influenced his reticence to engage. He notes the strong face-to-face culture, and questions the true value of technology within this context. Malcolm is aware of the pressure on staff generated by student numbers, but is unconvinced that there is a need for a seismic shift towards enabling technologies.

“I came to [Robson] University many years ago, because… we were teaching in smaller groups and you kind of got to know the students, which is a system that I did, you know, I did my degrees at university in that kind of system. I knew the lecturers quite well and I liked the system. It's a bit more 'me', and I do think that some of the technology
Malcolm’s deliberations show that a strong face-to-face culture challenges the perceived need to employ technology in feedback. These vignettes also show that personal biography and identity shapes individual relations with technology as well as an individual’s perception of what their institution ought to be striving for. Malcolm has over twenty year’s teaching experience but still cites his own study experience as influential in determining his outlook. Any attempt to change attitudes must engage these strongly embedded layers of value and identity. It is unlikely that this organisational culture is embedded in new staff identity as by contrast Anna was keen to bring changes and modernisation to the practices of established colleagues, again this reinforces Opre, Zaharie, and Opre’s (2008) observation that career stage is important in technology use.

Another biographical factor that appeared to influence views on the use of technology, and also approaches to feedback, was the experience of lecturers’ own children. Those with children at school or university (specifically Flynn, Greta, Greta, Malcolm and Ruth) formed particular perspectives using their family’s experience as a contemporary reference point. For example Ruth had an awareness of the prompt speed with which feedback was turned around using semi-automated marking in her child’s current university experience, Greta formed a view of the types of feedback actually helped learning in her child’s experience, and Malcolm actively rejected the depersonalised stock comments that his own children found unhelpful in school. Examples of their accounts are offered hereafter.

- “[B]ecause I'm a student at another university, I've experienced their system. And I've had two children that have gone to other universities and
experienced what they’ve had. They never submitted any paper copies for their degrees and they had a lot of online material that was available to support them for feedback and feed forward” (Ruth).

• “I have got children that have gone through higher education and do use technology and I speak to a lot of students as well and I think maybe some members of staff don’t have those conversations with students and they are very much focused on their subject and I think maybe that is why I have a different view on it... Sometimes they [the students] really don’t care about feedback, it’s just the mark isn’t it, and it really depends on what it is and I think depending on which year you are in and depending on whether it is high stakes or low stakes and depending on what their perception of the module is, not my children, not even students here, I am talking very generally here, all those will have a different impact in terms of feedback and how it is delivered. Technology is just a mediums but I do think a mix of mediums if you like, is the best really, it is just being familiar in how to use those. My children have definitely influenced me in that side of things as well but maybe that is why some staff don’t have the same sort of view” (Greta).

• “we get these letters home, where the student, the teacher has obviously selected a statement from this side of the screen, slotted it in here, and it, I find most of it so generic that you can’t relate it to anything, and that kind of stuff at the school, [my wife] and I argue about it for hours, and eventually one of us will [go] into school to try and talk to a teacher and try and find out what it means. And we’ve had instances, where the meaning, in the end, after weeks of work, is actually the opposite of what we thought it was telling us in the first place… it's generic, and the wording, in a lot of cases, is education-speak. But not just education-speak, it's education-speak I don't understand... I just can’t understand it. ... it means just nothing to the child.. I suppose in some ways that's why I continue with the pen” (Malcolm).

The experience of close family as an influence within lecturers’ academic practice has not been located in literature, yet for five of the twelve
participants this provided an important deliberative anchor. The role of family in shaping pedagogic perspectives is an area that could be worthy of more research.

The underlying influence of biography

Chris, Phillip, Donna and Margaret have all had recent industrial careers. Links can be seen between their prior professional roles and either their individual approaches to technology or to their feedback attitude:

“[in my previous role] all our mappings we were using, GIS [Geographic Information Systems] and stuff like that and all our online consultation work that we did, we’d gone over onto an electronic system, and people were giving their feedback online .... We were fairly, IT focused, I suppose, in what we were doing…I think it may have made a difference” (Margaret).

“a lot of fed from my consultancy work because there’d be quality assurance … and that invariably would be a Word document and therefore, I’m very familiar with the approach of feeding commentary in terms of, is that quite right, does that reconcile …So that was fairly easy for me” (Phillip).

“I’ve worked as a riding instructor as well, and so my background to teaching has always been very much a practical thing, where you’re giving instantaneous feedback to what people are doing …you’re commenting on and how they’re doing a particular task”. (Anna).

Practices and priorities seem also to be imported from an individual’s own education as well as from their professional experience. Anna, for example, criticised feedback that she received as a student and linked this to her strong conviction about the quality of feedback she gives to students. Whether these principles depreciate over time is unclear. However as a more experienced practitioner who had been in post for over twenty years, Malcolm still referred to his feedback experience as being influential.

A third biographical influence on feedback or technology orientation is
emphasis on career passion. Some of those lecturers who showed a strong willingness to engage in technology displayed overt declarations of the passion that they held for their role: Donna claimed that she felt “lucky” to have the role, and Ruth identified that she too felt similar, even after over twenty years in post. Passion for role has been causally linked with internal motivation (Uyulgan & Akkuzu, 2014), but this research goes further and suggests that in the context of feedback and technology, passion can manifest in a willingness to try innovative practice. Although, recognising Malcolm’s aforementioned experience, it does not follow that a lack of innovation in this area is synonymous with a lack of passion.

The complexity of efficiency
Lecturers displayed concerns about efficiency and media choice in the formation of practice. As previously identified, the search for efficiencies in the production of student feedback was a primary motivation for a minority of those interviewed. Efficiency was more widely present in lecturers’ deliberations. It was identified in four more distinct ways. First, efficiency was an appreciated benefit, when it was achieved lecturers were invariably pleased. Second, efficiency was an aspiration as lecturers developed their practice; in these cases efficiencies were actively pursued as familiarity with tools grew. Third, efficiency was conceived as a relative concept; it was repeatedly mentioned in association with the enhancement of feedback. Particularly the search for efficiencies was countered by a concurrent search for personalisation and depth of feedback. The excerpt below from Phillip’s account describes how he oscillated between a concern for efficiency and a concern for enhancement. Phillip moved from a self-designed system of pre-made comments, which generated efficiencies, to a realisation that he needed to bring back some customisation in to his feedback, as a result he then moved to adopt dictation software to speed up the customisation process.

“So [my comments] are all pre-structured… you just click on a comment box and you can do two clicks…and they’ve got a whole load of commentary which you can either use or edit and change…this year, I found myself using more … having a bespoke comment, bespoke feedback, because it's easier, because all I have to do is say it to the
microphone, the microphone captures each word. So that makes it much quicker. I've lost that theoretic efficiency of being just being able to drag generic comments in...It's quicker than me typing" (Phillip).

Similarly Flynn was dissatisfied with recycled comments and so added an audio layer into his feedback to assist with personalisation. This audio supplement helped to avoid “a copy and paste job” (Flynn). His own commitment to do this was assisted by the time limited facility of the audio tool he was using within GradeMark, which meant the additional layer could take a maximum of three minutes. Where technology did enable efficiencies to be made, particularly through reusable comments, the desire to offer ‘good’ feedback erodes and sometimes cancels out potential time-savings. Where lecturers judged the time cost of tools to be significant the use of the technology was rejected. The final conception of efficiency is related to its power as a veto on innovation. When a technology is too burdensome it is rejected. These conceptions of efficiency are further summarised in Table 5.7.

When Gibbs (2006) described the workload pressure in the assessment landscape and the need for efficiencies, technology was conceived as a possible partial solution, however the use of technology does not necessarily imply efficiency gains even when the potential is there. This is because the tutor is constantly mediating both efficiency and enhancement. When Shelton (2014) and Mathisen (2012) recognised the prominence of enhancement and the importance of time in lecturers’ deliberations about technology they did not connect the two points; these findings take Shelton (ibid.) and Mathisen’s (ibid.) observations a step further and establish that time and enhancement are entangled aspects of mediation in feedback formation.
**Table 5.7 Conceptions of efficiency**

<table>
<thead>
<tr>
<th>Conception</th>
<th>Description</th>
<th>Example vignettes</th>
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<tbody>
<tr>
<td>A primary driver</td>
<td>The search to save time in assessment and feedback motivated practice</td>
<td>“I can start marking before the deadline if I want to because if anybody’s actually uploaded it early, I can start working on it …I think that’s what drew me to it” (Margaret).</td>
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<td>A welcome benefit</td>
<td>The search to save time is important in the choice of technology</td>
<td>“From a marking perspective, I think it saves a lot of time. Because, we might have a 20 percent for section one, 30 percent for section two, you’re having to work out, well okay, how much have I given the student and add it all up, rubric obviously does that much quicker, very simple” (Chris)</td>
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<tr>
<td>An concern within the development of practice</td>
<td>Within technology based feedback practice, lecturers refine their practice in search of efficiencies</td>
<td>“When you’re marking you tend to find a lot of repeat. Some missing this and some missing that, so once you’ve typed it out so you can just edit that bit out. So re-using bits. I’ve got a little technique I’ve just devised the last few days”. (Marcus) “June and I have designed two sets, what we call banks of comments now. We’ve got lots of comments that relate to specific parts of the assignment. So when we’re looking at section A, we’ll pull up all the section A comments which relate to that. So it’s very quick, essentially to mark section A then we switch to question B, look at those comments and we’ll use some of those comments” (Chris).</td>
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<td>A relative concept</td>
<td>Efficiency inseparable from the gains made in the enhancement of feedback</td>
<td>“Whether there’s a timing issue, because people do tend to say, oh if you use IT the systems will be quicker, and it won’t. Well I haven’t found it to be any quicker… it didn’t put me off, because I was happier with the feedback I was giving the students, I think… “(Angela). “I was reusing, and obviously in foundation, you’re using those reusable comments. I think they’re not wildly rich because that makes it in theory more efficient but I’m not sure it as richer feedback for the student” (Ellie). “I don’t have to rewrite the same comments all the time … there are some efficiencies because you’re not having to write the same and repeats, but because you do more it takes the same amount of time” (Donna).</td>
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<tr>
<td>A veto concept</td>
<td>Where the time-cost is deemed high, the practice is rejected</td>
<td>“I watched you demonstrate [Jing] in relation to a[n assignment] and I thought how utterly unrealistic to think that I can actually sit down and do this for sixty pieces of work. Fine if you’ve got five, but for sixty pieces of work, it’s going to be much more efficient for me to type” (Ellie)</td>
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Negotiating the technology selection

Lecturers’ personal media preferences manifested as an inclination to connect with, or reject, one or another form of technology. Margaret and Angela particularly disliked audio because they both identically stated, “I don’t like the sound of my own voice”.

“I don’t like the sound of my own voice, so anything that, it sounds strange … So anything that involves recording comments – That doesn’t really do for me” (Margaret).

“I don’t like the sound of my own voice … and I’m sure some students would really like to hear your absolute views, but I’d probably change my mind quite a few times and it would probably take me much longer” (Angela).

Even though Angela recognised that students may like an audio approach, she was still deterred. Both Angela and Margaret had a supply-side tendency in their feedback orientations, which may magnify the emphasis on the feedback product. Donna expressed a preference for visual tools, which was something she was currently exploring; she attributed this to her own learning style.

Beliefs about student learning preferences influenced technology selection. Phillip believed that students connect better with text than audio: “I guess in my mind, I’m supposing that … to look at and re-read and continue to re-read is perhaps more useful than listening to audio”. Similarly Anna describes, “I’m not sure that verbal feedback is necessarily as effective as being able to read what you’re seeing”. Both Phillip and Anna have strong student-centric orientations and show great concern for how feedback is received. Nevertheless their views about the best way to receive feedback are rooted in their own perspectives, and not in any explicit evaluation of student preferences. Learning style preferences were primarily the concern of those whose musings were undertaken in line with the global-meta mode.
A third dimension of media negotiation shows sensitivity to the emotional dimensions of feedback. Some lecturers viewed feedback as an emotionally evocative process; this was reflected in their concerns about the appropriateness of different media to deliver feedback.

“there’s a whole form of communication behind using a verbal communication. I have to present it in a positive and upbeat way, when I’m actually thinking I’m on my fifty-fifth … [a]nd actually I can’t keep maintaining that positivity that you need verbally to be able to do that for that number of students” (Ellie).

“I did it quite personal and I found that I have tried to develop it because recorded voices can become a bit more maternal” (Ruth).

Emotional interests were not limited to audio aspects, Phillip recognised that text could remove the emotional signals to indicate good intent and so he ensured that his written feedback always began with a statement describing that any feedback comments were intended to support and guide, not to criticise.

A fourth consideration in the choice of technology is the relationship of new practice to existing practice. In the negotiation of the technology adoption there is a ‘translation’ process where the ideas or technologies encountered need to be understood and translated to work with existing practice. Flynn describes: “If someone came along and showed me something, I could see how it would work. … it’s that translation of how you’re doing and what you’re doing at the moment and using that technology in trying to make it work” (Flynn).

Introducing technology appears to be less tumultuous when the technology dovetails with current practices. When lecturers already used criteria based rubrics their shift to GradeMark was given a head start. Donna, Ruth, Ellie, Phillip, Chris and Margaret had all encountered rubrics before they considered
GradeMark. This is advantageous because “there is considerable adaption and thinking required by teachers before they can implement [rubrics]” (Atkinson & Siew, 2013 p. 662). In Margaret’s case she had taken on someone else’s module and so deemed herself to have been handed an advantage. She explains: “I inherited a basic rubric from my predecessor, because the assignment that we run is an assignment that we run every year, it’s one that’s repeatable which is quite nice, and so there was a basic rubric there … and it was a case of just expanding that and tweaking it [to integrate it with GradeMark]”. This appears to highlight the benefit of module rotation as a form of advancing ways of working.

Lecturers appear to either have a technology already in mind, which is brought out to meet a need as it arises, or they store the issue that requires a solution in mind, and remain vigilant, looking out for a technology to meet their needs. Buchan (2011) questioned the driving power of technology, believing that use arose mainly from need rather than from technologies themselves. These findings appear to reinforce Buchan’s view, but there were exceptions in the form of instances where lecturers were trying to talk themselves into a technology that they believed could be useful. Chris for example had encountered Angela’s use of PebblePad but could not immediately see where it would work, though he was actively deliberating on this point:

“[I’ll] find out a little bit more about it and then see if I can fit it into what I'm doing… I was just trying to think which module it would fit with, really. I can see how it fits with hers very clearly… It would depend on again what we’re trying to get them to do and the reasons why we want them do it. But I'm thinking about doing it with my first-years” (Chris).

This is an example of where the availability of technology generates reflection on how it could be used. This is tool driven, rather than needs driven adoption.

Finally, the individual lecturer’s desire to stress structure or content in particular instances of feedback appeared to influence technology choice.
Tang & Harrison (2011), and also Hyland (2013), identify that teachers tend to emphasise either ideas and concepts or structural aspects in their feedback. The data in this study showed that this feedback emphasis seems to be determined by the precise assessment scenario. The negotiation of structure and content balance goes beyond a tutor preference. Ellie, for example, suggests at Master’s level she would be more inclined to focus on ideas, whereas for foundation students she would concentrate on structure. Ruth and Phillip suggest that their technology choice was based on the type of feedback they were aspiring to offer, inferring that this varies. Moreover Greta was deterred from using GradeMark technology by the idea that it would shape the balance of her emphasis, causing her to comment more on structure and less on content. There were some instances of individuals having ‘pet’ issues within feedback: Donna valued accuracy in referencing at every level and Phillip emphasised skills in summarising ideas from literature as something he tried to always advocate. Nevertheless participants clearly internally negotiated their feedback emphasis; in turn these negotiations impact how media or tools are selected and experienced. Data vignettes to illustrate these points are offered:

- “sometimes with [reusable] comments, you can just pile them up, you just get a pile of comments and sometimes they are a very superficial nature because they have to be and sometimes I think if you had too much of that, it is almost like having too much of the same food, you would be very sick. I think having a mixture is better”. Superficial here was explained as “a tendency to focus on the mechanical features perhaps or the surface features of a piece of work” (Greta).

- “At Masters level… My fundamental is that you’ve not got to go in and say your full stop is in the wrong place, your referencing is wrong, but you’re commenting on concepts, and students’ opinions. I think that works really well” (Ellie).

Hewitt’s (2010) recognition that established practitioners come to distinguish which feedback strategies to adopt and when appears to apply specifically to the consideration of media. Indeed Wheeler’s (1998 cited in Hewitt, 2010)
metaphor of a kitbag of teaching tools and methods may be extended to be a toolbox of technologies to address different feedback needs.

It was not within the scope of the research to explicitly consider the benefits and difficulties of specific tools, though a range of insights about the technologies are summarised at Table 5.8. This summary reinforces and the experiences found in literature about the relative merits and difficulties with different technologies (see Table 2.1 for a summary from literature), and it underlines considerations that have been evident in lecturers in decision-making at Robson University.
<table>
<thead>
<tr>
<th>Technology</th>
<th>Perceived benefits</th>
<th>Perceived challenges</th>
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<tbody>
<tr>
<td>Audio (within GradeMark Interface)</td>
<td>Recorded in real time (time benefit); Can be used to reinforce the main points of an accompanying textual message; Succinct.</td>
<td>Some felt the need to script audio resulting in a loss of efficiency; Perceived duplication when used in combination with other methods.</td>
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<tr>
<td>Audio visual (Jing)</td>
<td>Used to engage students with different learning styles and media preferences; Adds variety to an otherwise text heavy environment; Personal and valuable for feedback where relationships are strong; Can offer a nurturing maternal media.</td>
<td>Some felt the need to script audio resulting in a loss of efficiency; Hard to maintain consistent tone of optimism across large groups; Emotional reaction of tutor to the work may be revealed in tone; Concerns that the feedback sits outside of the university infrastructure (what if it goes wrong?); Dislike of hearing own voice replayed; Belief that students learn better from feedback that is written; Success reliant on tutor ability to engage through tone.</td>
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<tr>
<td>Text based (Grade Mark)</td>
<td>Potential efficiencies in the use of ‘Quick Marks’ Possibility to personalise comments; Complexity in initial set up; Development of detailed criteria and Quick Marks prompts improvement to assignment preparation guidance; Adding comments in a way that they can be moved around the page lends prompts the consideration of balanced feedback; Having the assignment on screen prompts deeper reflection about the task requirement; Especially useful to link to signposted resources;</td>
<td>Tendency for quick mark efficiencies to be lost by time spent personalising; Challenge to engage others in associated quality management activities including second marking and external examining; Rubric template sometimes doesn’t fit with existing paper based rubrics meaning revisions are needed to established marking schemes; Lack of mobility in desk based version limits staff flexibility; Not fully integrated in to wider information systems with an implication for workload; Associated by some with structural feedback rather than</td>
</tr>
<tr>
<td>Time saved in complex grade calculations; Potential to integrate with dictation software (for efficiency); Legibility improvement; Ability for lecturers to monitor student access of feedback; Can be translated in to offline practices where the need arises (e.g. numbered comments, mid-point marking); Ability to revisit feedback comments is good in case of student inquires.</td>
<td>deep content (with an emphasis on Quick Marks rather than a summative comment); Ability to share comments across modules teams for consistency.</td>
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<tr>
<td><strong>Text based (Comments within Word or PDF files)</strong></td>
<td>No login process required (fits with the existent email culture of many students) and uses the software in which documents were created. Self-made comment banks can result in an efficiency; Sense that comments are conversational – in that they are suggestions, which can be accepted or deleted.</td>
<td></td>
</tr>
<tr>
<td><strong>Text based (Pebblepad)</strong></td>
<td>Able to see the feedback of others (transparency); Simplicity of use. Limited ability to locate comments next to the precise issue arising in the students work.</td>
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The institutional landscape

The context of Robson University exerts influence on the way that lecturers engage with technology for feedback. This claim is now explored with respect to the social processes, the quality management landscape and the tensions associated with practice. Attention is given to influential and unusual occurrences from individual narratives, as well as to commonalities in participant experience.

Socio-cultural processes influencing practice

A powerful process of acculturation was evident in the development of Chris’s early feedback practice. Chris was socialised in to a network where he adopted the values and practices of others with whom he was working. The formation of relationships that led to acculturation was triggered by, in his own word, the “luck” of landing in a particular teaching team, and in a physical location where there was a dominance of pro-technology and positive feedback approaches, and where there was a sharing culture. Chris describes the this process:

“I was quite lucky actually that very early on I got accosted by Peter Smith. He said, “No, no, you know when you give your assignments back, you must have this sheet which follows the objectives of the assignment” … I’ve been instilled in that from day one really which I think is a really positive thing” (Chris).

Chris observed that before this encounter with Peter Smith, his view of feedback was “negative”. He experienced a transformation in his feedback attitude before his use of technology for feedback developed. His adoption of technology occurred in a similar way as Chris was mentored by an experienced user with whom he was team teaching. McDowell, White and Davis (2004) suggested that altering feedback practice cuts much deeper than using new approaches, but rather involves deeper conceptual shifts in pedagogic perspectives. Chris’s case shows this process in action.
Marcus’s account shows a sense of transformation when two members of his module teaching team imported ideas that they had encountered during external training, in their post-graduate teacher training programme. They introduced the use of Pebblepad to Marcus to provide pre-planned formative feedback from different tutors on different parts of a portfolio assignment. The import of this practice was not straight away after the lecturers had completed their training; rather instead they had stored the idea until it offered a solution to a specific issue arising for the module team. For the team to accept this technology they had to trust the individuals responsible for the imported technology. The importing pair were deemed to have superior technical capability, partly inferred by their young age, and they were perceived by Marcus as the module leader, as people who could be relied upon to guide implementation. Marcus explains in his own words how Pebblepad was introduced by his engagement with others.

“Victoria had been to [another University] I think and done the course there and they had experienced something like PebblePad there, and she thought it would be good to have some kind of feedback as [the students] went along. After every three weeks they would submit a piece of work on the five topic areas…so after three weeks they would submit on what they have covered for those three weeks and she thought they wanted to have instant feedback so after a week they would do their summary or reflection … Victoria, and I think Toby, thought that Pebble Pad was a way of doing that. They could put the information on, and then we can give comments, side by side, by the side of those comments. So as it was fairly new at Robson, and it was a new module, so we thought we would give it a go…she’s quite a forceful young lady, I didn’t want to tread on Victoria’s toes. She thought it was a good thing, I thought I’d give it a go. It might be brilliant; it might be useless…I don’t know. For what we were doing with their feedback, they thought it was the right package at the time. So, glad we gave it a try, I suppose”.

In the decomposed model of planned behaviour, intent to engage with technology is seen as a product of attitudes, social norms and self-efficacy
(Taylor & Todd, 1995). Precisely what this meant in practice is less clear in the context of feedback technology, but Marcus’s journey has shown these factors in action. Marcus’s inclusion in the ‘dinosaur’ technology orientation group was attributable to his lack of experience and lack of confidence. Marcus’s limited confidence to use technology has been compensated for by social drivers and positive peer pressure. The new engagement with technology is impacting his confidence and potentially challenging his association with being a ‘non-user’ of technology. Through the engagement with the technology for feedback, Marcus has been exposed to dialogue with the e-learning team and has discussed using tablets in his teaching.

“[the e-learning coordinator] was using iPads … I haven’t got one yet. The only problem with that is getting all my notes onto the iPad. But I think it will be very good, I want to use it for the calculations to save an OHP [overhead projector] so you can interact and write on it which I think will be absolutely fantastic. Yes, so I’d like to go down that route” (Marcus).

Marcus is making plans with renewed confidence. Geoghagen (1994) described that relationship between technologists creates conditions that favour further innovation amongst early adopters at the expense of the mainstream. Marcus showed that once a relationship with the central team had been established he was exposed to further possibility; this does reinforce the aspect of Geoghagen’s claim that such relationships lead to further innovation. Marcus’s belief that technology should serve teaching is being awoken from a latent view, as he is able to see what might be available and how he could use it. Marcus’s case shows that where technology non-use is not deeply rooted in identity, exposure and social practice can be transformative.

While the adoption of technology across a teaching team generates new directions, it also brings challenges. Flynn for example leads a module that has multiple tutors; only some of them adopted the use of GradeMark for grading and feedback, and Flynn did not feel empowered to insist that all
tutors used it. Without the whole team being prepared to use this technology Flynn had to manage inconsistency of marking and feedback approaches across a team. He did this by creating very clearly defined marking criteria in the form of a rubric and by using a system of attributing marks from the mid-point of a grade category. Teachers who were not using the online system needed to utilise these features of the system, but in a paper based format.

In smaller teams too the technology can bring about challenges. Phillip was using GradeMark alongside another tutor, who was not using the technology. Phillip developed concerns about parity, he explains:

“I was nervous about exposing the students and ourselves to all sorts of commentary and discussion. If half the course, the module is marked online … And the other half is marked completely handwritten annotation, what's the student experience like?” (Phillip).

Different lecturers deal with the parity differently. Ruth explains, “I’m quite conscious about students that they get an equal deal and, I do have a module that it might be appropriate [for technology enhanced feedback] but unfortunately, because I share the marking, I think until a colleague actually wants to jump on board … I can’t”. Rather than abstaining, Phillip adapts his approach to use the principles of the technology in use (GradeMark) but in a paper based manner by typing his comments as a list, numbering them and then adding the numbers to the paper copy of the student’s work. Philip had mediated a range of concerns including respect for his colleagues’ autonomy, his belief in high quality feedback and quality management concerns, to develop a workable, compromise solution, but this did cause him frustration that he could not convince his colleague to use the same approach.

Within a team, different views about the best technology to use emerge. Margaret, who was part of Marcus’s marking team for his feedback through Pebblepad, expressed frustration at not being able to use tools that suited her own style and her existing routines. She was also irritated at the additional
burden of needing to remember how to operate another interface. Margaret’s quote offers insight into how it feels to have a technology imposed:

“Pebblepad is more recent and that wasn’t my decision … I didn’t get a say in that but I didn’t have any particular problems with it … I don’t think it’s as flexible as GradeMark because … you only seem to be able to write comments in a box at the side … so you can’t annotate in the same way … [T]here were lots of poor writing issues and incorrect bits, and I think [other markers] were trying to sort of say the second sentence of the third paragraph, and I thought I’m not going to get into that” (Margaret).

The existence of loose networks in the institution was very important in the formation of practice. A loose network is used to describe relationships formed outside of an organised team. Such networks appear to form through physical co-location. Corridors of practice develop and can facilitate the growth in technology use in feedback. Margaret and Donna describe being next door to Phillip:

“Phillip, who’s next door to me, we talked traditionally … we’ve sometimes chatted about setting up the rubric, and I think that’s one of the challenges a lot of people find” (Margaret).

“Phillip, he’s across the corridor … he gives me advice, because I was doing comments and then I was typing the comments on, so asked him what’s the best way was” (Donna).

Similarly Anna described how being based on the periphery of the campus left her, along with co-located colleagues, to work as self-supportive group:

“we’re a little bit separated … We tend not to have time to go over to the other side and talk to people, so it tends to be just us talking, and we do a lot. … it’s nice because we do have quite a close-knit group, and we do talk a lot about feedback, about what we’ve been doing, and … take ideas from each other” (Anna).
According to Ruth, you can “be inspired by watching somebody else if you just happen to be in that place”. The happen-chance nature of powerful encounters was recognised by Donna, who explained: “I am only finding things out in passing … It’s not that I don’t socialise and I don’t get to meet people from other departments, it’s very difficult. Because we’re all in our little offices, and there is no meeting zone, apart from the kitchen”.

Beyond the physical barriers to sharing practice, an attitudinal reticence to share and seek support was also detected. Ruth, Angela and Ellie expressed a reluctance to spend quantities of time exploring each other’s practice or seeking assistance to get started with a different technology, believing that this was too much to ask of each other:

“I don’t think it’s fair to expect people to actually, you know, sit down with me for half an hour when they’ve got their own workloads” (Ellie).

“if you've got somebody who is good at using [a specific technology], if you're not careful, they effectively end up being a tutor for people on a one-to-one basis” (Ruth).

There was a sense in a number of accounts that individuals usually tried to “figure out” their difficulties (Donna, Phillip, Anna). Phillip expresses this at multiple points within his account:

“I had my own problems of learning software but I kept them to myself. Because there's nothing to be – what's to be gained by going off and moaning to colleagues about things that don't work” (Phillip).

“I'm probably fairly proficient at learning software so most things it's self-taught so it's just a case of looking at it, thinking about it, have a go, yes it works, no it didn't, why didn't it work, go back round again” (Phillip).
“I'm trying to work out what the solution is. In the main, I'm sort of self-sufficient” (Phillip).

Margaret identified the limited sharing as an opportunity lost: “I’m sure we’re all doing things slightly differently and could probably, you know, somebody might be able to say to me well the voice thing’s really easy, you just have to do this and it’s very straightforward”. Formalising these opportunities too much was thought to be potentially a flawed solution: “I think the word formal will probably put a lot of people off, I think an informal formal group [is better]. I think it would be good to just sort of say come and have coffee and biscuits and let’s just have a chat through, you know, best practice and stuff without making it too formal” (Margaret). This rejection of the formal indicates a preference for community rather than structured approaches. It appears as if a structure is craved, but not in a way which dampens organic creativity and dialogue. Donna, through her analysis of the limitations of the physical environment, reinforces the perceived power of the informal dimension of activity in shaping practice: “The problem with individual offices is that we’re all in our own little bubbles and I know there is the common room downstairs but I never have time to go over and drink tea, as much as I’d like to meet everyone I don’t get the chance, so it’s almost about space occupancy design … the best ideas happen at the coffee station. To some extent it’s a shame we don’t have coffee stations round the university so people can meet up and talk”.

Super-users of technology in feedback have provided inspiration and encouragement to those interviewed. Two individuals, Dawn and June, were referenced in seven of the accounts. The role of these individuals has been to inspire, encourage, inform, advocate, and trail blaze problems and offer solutions for others. A sense of their contributions can be seen in vignettes:

“You need someone like Dawn saying come on guys; it’s not as hard as it looks” (Flynn).
“June would have had a big influence on that [getting started] process and that learning process and that I was giving it a go simply because she was doing it and she's making it work” (Phillip).

“[e-learning] are very good as well as other staff like, Dawn, at supporting staff to do it and so if you're like me, you're not very techy and you feel like a complete idiot” (Ruth).

“I'd like to have more time to explore it and hear about the other things that Dawn does, and you know just think, how does she have the time, you know?” (Margaret).

“Dawn demonstrated the [digital] pen with the availability to write and speak at the same time. I quite like that idea in terms of feedback” (Chris).

The advocacy of super-users appears to be motivational; nevertheless the outstanding efforts of these individuals could be associated by self-effacement by others who marvel at it. Margaret referred to not knowing how Dawn ‘does it’ and Ruth refers to her own abilities in a depreciating way when in-mind of Dawn. Evidence of participants’ self-comparison to weaker practitioners was evident too. The impact of relational self-criticism or, by contrast, egoism, in the context of academic practice is not investigated further in this study; knowing the true impact of positioning oneself relative to others in regard to technology or feedback is unknown, but it is suggested that this is worthy of more investigation if social influence is to be more deeply understood.

The power of these super-user trailblazers is great; they wield influence in discussions due to their credibility. Referring to GradeMark Ellie said, “it was oversold for what it actually is, and the message has gone out that it saves time and that isn’t the message from people like June who’s a user. Was a heavy user. Her view is that it takes more time”(Ellie). These reports have an impact on how practice is negotiated. As a consequence of this message Ellie
was cautious in her uptake. The power of such statements is potentially troublesome when the technology evolves to resolve the issue of concern but the report is socially embedded and so lives on.

There is a clear technology support hub associated with Robson University’s technology enabled feedback. Every participant cited the two-strong institutional e-learning team as a reference point for developing his or her practice across a range of technologies. The nature of the support is largely technical and is on a one to one basis. The need for support was identified around initial set up but also as a refresher as staff reported forgetting how to use different aspects of their technology as they used tools sometimes infrequently.

“Once you know those buttons, you are fine. But it you don’t know what they are, they’d mean nothing to you. So it is just familiarity so if you use it regularly it would be easy. But if you do it once in a while, which buttons do you press?” (Marcus).

“if you don’t use stuff regularly, the problem is that you just, you come round to do it and it’s like I’ve been shown how to do this but I can’t remember” (Margaret).

Organised forums provide an opportunity for ‘show and tell’ of technologies. Lecturers can often remember the events and presenters who impacted their practice:

“I'd never heard of screen capture and Jing at all and I might never have come across it had I not just by chance gone to a conference where somebody was demonstrating it. I thought, yes, I can really use that and through that, we obviously brought it to [Robson] and a few staff use it now” (Ruth).

“I went to something at Birmingham where a guy who was using Jing … I saw him there… and amongst other things, saw that and thought, that looks really good. He demonstrated how he was using it and I just adopted it straight off” (Phillip).
“I am normally inspired by the fact that someone else has tried this, even if then it turns out that I don’t interpret it the same way as they do” (Ellie).

While Ruth notes the chance nature of her discovery, the injection of external ideas around technology for feedback is from multiple sources appears to minimise the risk of ideas not getting in. Injections of inspiration occur via mailing lists (Anna), invited speakers (Phillip, Ruth) and training sessions appears (Ellie, Phillip, Flynn, Simon, Greta) and educational development colleagues (Ellie, Margaret, Donna, Angela, Flynn).

Literature pointed to social practice as being important for innovation diffusion (Rogers, 2003) and technology acceptance (Taylor & Todd, 1995). Through examples, this discussion has shown the range of different social processes at work in relation to the adoption and continued use of technology in feedback. Models of technology adoption, which do not explicitly reference the role of social processes, are inadequate in this context. Bagozzi’s (2007) approach to understanding technology-based behaviour, in which the technology using individual acts as a mediating, dynamic and changeable force, seems highly relevant. The examples from Robson University show that lecturers are continually planning and responding to a range of factors, navigating impediments, and re-appraising their practice. They show practice has emotional undertones (including frustration and nervousness) and that it involves continued self-review. Bagozzi’s model captures the complexity evident in this context of technology use.

**Quality management landscape**

The quality landscape at Robson University, as other UK institutions, includes second marking processes, external scrutiny and the use of proformas to document the formal assessment and feedback process. Participants possessed a degree of procedural uncertainty around the use of technology for summative feedback. This was more of an issue for those who are newer to this type of practice and those using technologies that have not been widely
accepted. For example, Anna, who was in the throes of her first iteration of GradeMark feedback admitted that “[my] biggest concern had been that I thought I had to go through the course approvals committee, basically, to be able to get approval to change it from being paper based to … being online submissions … actually discovering I didn’t have to do that. I was like, oh okay, I can actually do that for all modules when I want to”.

Angela and Marcus were using Pebblepad for the first time, albeit working separately, and both experienced uncertainty about how to manage cut-off deadlines for submissions. Angela’s approach was to live with uncertainty and accept that this was something new. Marcus on the other hand sought resolution and was very concerned “I was pulling my hair out at the time [of beginning to use Pebblepad]… I thought oh crikey, I’m just trying to get this damn module going up. I had a lot of trouble and then there is another problem”.

Donna encountered specific challenges with a lack of student anonymity in her use of GradeMark and noted that she would have to resolve this herself by engaging with the assignment administrators who set up the online submission box arrangements (including anonymity). Anna encountered the same issue and because she did not know how to resolve this in a timely way, she delayed her technology engagement and undertook paper based marking and feedback. Margaret took a still different approach by improvising and using a sticker on her screen to cover up the student name.

Procedural uncertainty included (though was not limited to):

- Initial uncertainty over how anonymity of submission rules could be adhered to (Donna, Anna, Margaret);
- Uncertainty over how submission cut of dates could be managed ahead of grading and feedback in different environments (Marcus, Angela);
- Uncertainty about the rules around digital submission only (Ellie, Anna);
- Uncertainty around how to maintain official records of assessment and feedback when working outside ‘authorised’ systems (Flynn);
• Uncertainty about whether offering substantial formative feedback fits with the institution’s philosophy on assessment, which was perceived as prioritising ‘testing’ (Marcus).

Additionally, ambiguity about how second marking and external scrutiny should happen, and frustration in the way that it currently happens, was noted as a prominent concern by a number of lecturers:

• “printing everything off, it just makes a mockery of the whole thing really, doesn’t it?” (Angela).

• “it’s not straightforward because I had to print off the work… because they’ve never used GradeMark. … That took me half a day to get those printed off. It’s huge chunks of time. I’ve got to be honest, technology wastes time phenomenally” (Ellie).

• “my other second marker, as well, likes the printed versions rather than the online one, so second marking’s been a bit of a pain, really, in terms of having to print all that off” (Margaret).

Donna was accepting of the uncertainty and suggested that she would “just deal with it” when the need arose. Greta and Malcolm did not identify any aspect of quality management as a concern indicating that this factor is only activated by intent.

For some, the second marking process was an opportunity to explicitly promote change in their departmental networks. Anna describes how she has encountered reluctance to use technology in second marking, but that she is “putting her foot down” about expectations in this area and explaining to colleagues that students value this approach and therefore they should support the process. Chris is also using the process for change. Chris is deliberately drawing in colleagues to see his practice. Margaret described that after a number of years one of her reluctant second markers is now considering emulating her approach after being slowly enticed by exposure. At the same time second marking with a technology using partner can put people off by further entrenching their reluctant stance, as was explained by Angela. Greta is an example of someone in the process of being drawn in to
the process of second marking. Greta was about to embark on her actual use of the technology at the time of interview. She is prepared to try this but is concerned by the time involved and ease of use.

“I think there was a decision made that marking was going to be online and we would have done the marking online and shared it this year. I am actually happy that didn’t happen and I am only going to be second marking on line because I am not convinced that it is easy to use…I would say that it took me several hours to get an iPad with all the submissions on it, I can't understand why it took so long”

The second marking process helped some lecturers to affirm the type of feedback that they aspire to offer. Chris and Phillip both encountered practice from others that sparked a reflective reaction about their own position:

“When I had second marking, I've looked at what they've done that's good and thought about things that maybe weren't so good and tried to … pull together what I think is a good level of, a good standard of feedback for students really” (Chris)

Observably some external examiners are moving towards routine acceptance of some technology-based approaches. In two instances, for Chris and Marcus, the external added confidence and impetus to early steps with technology based feedback. Internal colleagues questioned Chris’s use of GradeMark, since he adapted the nature of the assignment to better fit with the interface, but positive feedback from the external examiner on his feedback gave him momentum for continued development of this practice. Marcus was initially motivated into action to address his personal practice by comments from an external who emphasised the need for high quality feedback, he initially thereafter began to type feedback. The external examiner can in these ways provide confidence and act as a catalyst for change.

Literature hinted that quality assurance has a bearing on feedback practices. This research has shown that quality processes can both enable and constrain technology use in feedback. They can provide a change mechanism
and reflective trigger for individuals to review their own practice. The way in which lecturers interact and engage with the quality system does depend on the agency of the individual, and particularly their confidence to work with uncertainty in the context of a rule based system. What is going on here resonates strongly with the lecturers in Hockings’ (2011 p.197) study where teachers working to support learning, not specifically through feedback, encounter organisational constraints yet they go on to change “inhospitable places into safe and inclusive spaces in order to engage as many of their students as possible”. In this case the sometimes-inhospitable quality environment is worked with, through and around to advance practice to engage with students in new ways. Sometimes this need to navigate arouses frustration and sometimes the landscape is deemed to be impassable resulting in the cessation or temporary suspension of innovative practice. Examples of the different responses presented in the detailed description are summarised below at Table 5.9.

**Table 5.9 A summary of lecturers responses to quality challenges**

<table>
<thead>
<tr>
<th>Issue</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uncertainty about the level of approval needed for a new technology</td>
<td>Concern and seeks answers from an authoritative source (Anna)</td>
</tr>
<tr>
<td>Preserving anonymity</td>
<td>Self determined technological solution (Donna)</td>
</tr>
<tr>
<td></td>
<td>Postpone use (Anna)</td>
</tr>
<tr>
<td></td>
<td>Improvise (Margaret)</td>
</tr>
<tr>
<td>Philosophy of assessment clash</td>
<td>Seeking answers (Marcus)</td>
</tr>
<tr>
<td></td>
<td>Resignation to uncertainty (Marcus)</td>
</tr>
<tr>
<td>Acceptance of colleagues to second marking through technology</td>
<td>Adaption of practice (by returning to paper) to fit existent procedures</td>
</tr>
<tr>
<td></td>
<td>Advocacy of feedback and technology (Chris, Flynn)</td>
</tr>
<tr>
<td>Seeing other practices in reciprocal second marking</td>
<td>Reflection on own practice (Chris, Phillip)</td>
</tr>
</tbody>
</table>
A contentious area of practice

Reinforcing Geoghegen’s (1994) findings, Malcolm demonstrated that technology does result in alienation as innovators win esteem, while colleagues with different objectives observe the cost and resources of this activity, and feel its disruption. However tensions in the feedback and technology landscape were multi-directional, going beyond those described by Geoghegen (*ibid*). Tensions occurred in relation to:

- Use of technology and the alienation of those not involved
- Perceived poor feedback irrespective of technology being used
- Perceived poor feedback and a lack of willingness to use technology to address specific issues
- Perceived reticence to try new technologies for the benefit of students
- Workload imbalances associated with trying to develop and sustain good practice

In describing their own decisions and practices eight of the interviewees showed frustration in relation to workload imbalances associated with feedback and technology. They also showed irritation with staff getting away with poor practice. They expressed exasperation at their failed efforts to make a difference amongst colleagues who may not be prepared to go the extra mile with either feedback or technology. Some examples of these comments are shared (these quotes are deliberately not attributed given the controversial nature of their sentiment):

“some of the feedback here is absolutely fantastic. But …I'm paid the same as other staff who aren't looking at technology and they don't want to and they're not interested. Which is fine but, we're all professionals and we all have to support the students and things are moving forward” (Ruth).

“And there are some colleagues … their purpose is to get through the process as quickly as possible, and if they can do it in five minutes instead of ten - that's fine … certainly having seen this, having second marked work of other colleagues, I just think is appalling.”
“I think there’s still an attitude among some staff here which I do have concerns about. I deliver, you take, that’s it, you know you take what you’re given, and it’s tough if you don’t like it”.

[For technology use in feedback] “It’s that mindset; it’s that translation of how you’re doing and what you’re doing at the moment and using that technology in trying to make it work. And that’s what some people might struggle with…It’s not going to be easy but it needs to be done because they are spending their time complaining that they are marking all the time”.

“I’ve found with other people, do you really think students can learn from this? what are they supposed to do with this comment? How are they going and learn from that? how are they”.

“And it think if staff realised how poor their feedback was, if they actually listened to the students – and I think perhaps that’s where the student voices should be more important – to actually say to staff, I can't read your handwriting”.

References to ‘the institution’ or references to ‘we’ (depicting plural agents as opposed to the singular, agency) were usually made alongside mention of the need to alleviate the disparities in practice. This connection in the data was confirmed by referring to the ‘code relations browser’ in the analytical software. It showed a co-presence of ‘institutional change’ and ‘fractured practice’ whereby participants describe that change is needed to bring about parity between staff and to make the organisation better able to support this type of practice. Lecturers appeared to be looking for a university-led or some form of collective approach to creating a more equitable situation.

“[Innovation] actually also depends on if there’s a greater clarity in terms of our strategy and our direction institutionally, I think that’s the
other thing, is at the moment it does feel like we’re all sort of swimming around in blissful isolation, and no sense of any real strategy” (Ellie).

“I think that’s institutionally, [use of a central repository for feedback] is something that just needs to be thought through” (Donna)

“we should actually be doing [staff development]. And as an institution, we should be demonstrating that staff are up-skilling and addressing development” (Ruth)

To make sense of this landscape of practice the discussion draws upon Archer’s (2000) concepts of corporate and primary agents. Corporate agents exert deliberate influence on their environment to affect change whereas primary agents do not; this does not mean primary agents have no effect but rather they are not seeking to actively change a situation (Thursfield and Hamblett, 2004). Corporate agents have “capacities for articulating shared interests, organizing for collective action, generating social movements and exercising corporate influence in decision making” (Archer, 2000, p. 266).

The feedback practice landscape at Robson University hosts agents who are seeking to change practice. They are talk about change in plural terms (as shown in the vignettes above) and they try to engage with colleagues to promote positive feedback practice. Some have ideas about systemic change and have aired these ideas. Examples of attempts to affect local change can be drawn from across stories: Angela tried to engage other team members in GradeMark practice; Phillip also tried to engage colleagues and adapted his own practice to provide smaller jumps in practice for his colleague to reach; Flynn describes advocacy in his department to promote tools for efficiency; and, Ruth describes cross institutional research in this area of practice that she had undertaken to make the case for change). Intent, albeit with different roots and motivations, exists to improve feedback and bring along colleagues who are perceived as disengaged or taking advantage. The action is disparate though and there are no formal forums or shared resources evident
to progress the agenda, as might be expected where corporate agents are at work.

The desire for action is universally tinged with a sense of collective powerlessness, which is apparent through the calls for institutional action but also in the exasperated tones within the story telling. There is a sense that individual or even collective actions are not enough; rather something else is needed for more significant change.

Returning to Archer’s own depiction of a corporate agent, the lecturers in the study appear to fit some of the description, but not all. Particularly these individuals did not fully sense their ability to make change happen. Archer’s (2000) presentation of the emergence of social identity may infer that this limited effectiveness could be attributable to the morphogenesis of corporate agency – whereby essentially the roles and identities of the different collections (or groups) are not yet fully defined. Essentially this is early stage corporate agency. This is a speculative explanation, which uses theoretical ideas to further understand what is occurring within the data. Suggesting that this may be the early stage of corporate agency does not infer that fulfillment of this description will occur eventually.

While formal structured responses to this fractured landscape are seen as part of the solution by individuals, no specific change calls are made beyond strong leadership. There is a sense of wanting to drive change but a sense of resignation that for change to happen a university-wide solution is needed. Recalling that formalising sharing of practice was not seen as always helpful, it is not simple to see how that leadership may manifest without eroding the practices of the loose network.

Corporate agents seek to press those perceived as laggards to change their practice. As Malcolm and Greta’s examples have shown such ‘othering’ may be over simplistic and not recognise a diversity of academic motivations, goals and identities. Archer (2000) described how corporate agents act in their own interest and primary agents might be stirred into action or form
counter agendas in their own interest. Within Malcolm’s narrative there was some sense of defending his practice as being good, irrespective of whether it had technology underpinning it:

“I suspect a lot of people cannot write well enough to provide meaningful feedback in an email or something… I would like to think I've probably been producing more feedback for my students than most of my colleagues for many many years. And I'm probably still the same now”.

At a surface level this practice landscape could be conceived as corporate agents exerting power and primary agents, as non-engagers, being passive; but looking below the surface shows a range of individual interests in research and teaching which reflect the multifarious activities of the institution. While Malcolm is an extreme example, numerous participants (including Margaret, Ellie, Chris) talked of the need for prioritisation and their trying to fulfill all of their responsibilities. For one group of participants technology was vastly important and given high priority, but for the mid-users technology as a priority was under constant negotiation. Malcolm and Greta’s non-engagement simply sat on this continuum. The tensions of the university’s competing priorities reproduce in the local negotiations of individuals.

**Impact**

Research participants were asked about the impact of their practice on them, their students and the institution. When verbalising the benefits of technology for feedback, lecturers cited the realisation of some of the factors that initiated their engagement; for example, Chris cited improved accessibility, while Marcus noted increased legibility.

When the technology was coupled with the use of a rubric the feedback approach was associated with improvements in the justification of marks, and fairness (Angela, Donna, Margaret, Philip, Ruth, Chris and Ellie). This impact was not inherently tied to the technology since rubrics can be used in a paper form. Nevertheless the impact of fairness was widely stated.
“I think when I’ve worked with work in the past, there’s an element of emotional response to a piece of work, and then irritation when you’ve read a really bad piece of work … I have a suspicion we tend to do is that we penalise a student excessively for that if we just give a single mark. Whereas if we’re required to work on a grid system… it makes us befairer in our marking” (Ellie).

Across technology platforms lecturers observed that their feedback was more focused, more abundant and higher quality. The perceived gains for students were based on different degrees of certainty. Some staff report anecdotal student feedback (Chris, Phillip, Donna, Margaret), others have conducted more systematic evaluations (Ellie, Margaret, Anna [planned not yet complete]) and some were basing their views on a hunch (Simon, Flynn).

Some lecturers reported increased reflection on students’ use of feedback. Some of these deliberations were aided by actual usage statistics (Phillip, Margaret, Angela). Beyond initiating reminders to students to engage with their feedback, there was no attributable spin off benefit of the usage statistics, except some questioning of the effort involved in providing feedback that was not actually viewed (Angela, Chris, Margaret).

The most widespread impact was that lecturers indicated that through use of the technology and the associated reflective process they refine the assignment, guidance and assessment criteria upon which feedback is based (Donna, Angelia, Phillip, Chris, Ruth, Flynn). Ruth for example described “an impact loop” where feedback comments given to one group, which are accumulated in an electronic form, informs guidance to the next:

“I give them an aide memoire … with a bit more detail, this is what I'm going to be looking for. So I make it quite clear to the student, this is what I'm going to be looking at. This is the feedback you're going to get, it is not going to change. So if you do this, this and this, you've
met the criteria, you'll certainly going to pass and then how well you do within that, in terms of – depending on what level you're at”

Similarly Donna notes her intention to use previous feedback in this way:

“What I might do is publish a list of the comments that I’m always writing and give them to students so they can use them as a self-evaluation … have I done this, have I done that, so then that targets all the students. So I just get all my premade comments and print them out, give them to the students and say this is what I mostly write, yeh, make sure you don’t do it”.

Chris, more fundamentally, changed his assignment design to enable the assessment and feedback process to better dovetail with the technology. Chris made his assignment shorter to aid efficiency and marker comfort within the online interface. In engaging with the technology he describes a reflective process of imagining the assessment product, as it would be seen on screen.

“I think it has made us think about perhaps the structure of the assignments and what, actually what we’re asking them to produce. Which I'm not sure we do really in every other assignment … But I think it makes, it certainly make you focus a bit more on what you actually want them to produce” (Chris).

Rather than reflecting on the actual assessment product, Marcus describes how his use of technology makes him re-think his actual feedback practice.

“when you are giving one type of feedback now, you are then perhaps thinking I have improved this [feedback] while doing that [using technology]. And then you’re getting ideas on how you might improve [feedback] further. So it is just progression I think. Looking back, you’re thinking, why didn’t I do that from the first time. … you are looking at things in a different way so it might trigger you to what you want to do in the future”.
As an extension of the questioning of existing practice, Margaret, Phillip and Flynn all noted the transfer of customs developed through the technology use into their remaining paper based practices – these include rubrics, mid-point marking and cross-referenced comment sheets (instead of writing in margins).

Watkins et al. (2014) claimed that a change occurs within lecturers when they move to technology based feedback approaches, particularly it was thought that lectures look more closely at their practice. These new insights reinforce Watkins and colleagues (2014) work and offer some additional detail. The data shows the technology causes both feedback practice and feedback product to be re-examined, and in some cases previous practices are brought into question.

**Summary**

A summary of the findings is offered in response to each research question. In drawing together the findings for all the cases at Robson University, the discussion returns to Archer’s ideas of the internal conversation and a three stage mediated framework to help understand the detailed complexity.

**What are the influences on lecturer use of technology in relation to the provision of formal student feedback?**

Beliefs about feedback were important in determining practice. Four new feedback orientations were identified. A feedback orientation or outlook is defined by individual perceptions about student expectations and behaviours, and feedback efficacy. Those involved in choosing technology for feedback had either a belief that feedback can *sometimes* make a difference to students or they believed that ‘quality’ feedback was a professional responsibility, regardless of whether students use it. Feedback orientations are shaped by prior professional values and experiences, prior student experiences and the experience of others who may be close to the individual lecturer. The orientation that emphasised feedback as process not product eliminates any need to invest in crafting formal of feedback with technology.

Users in the study had different relationships with technology. Some were
intense users who explored technology and others were reluctant users, carried along by others to develop practices with technology out of perceived necessity. As with feedback orientation, professional biography and perceptions about student expectations were significant in shaping attitudes. Relationships with technology were in some cases deeply embedded in identity. Beliefs about how technology should be used were connected to conceptions about what the institution should be; about whether its culture should be static, emergent (gradual updating) or radically changed. There was evidence of the positive role of training and institutional advocacy through the e-learning team, but a lack of recognition for technology-based practice appeared to work against these positive institutional messages. Technology orientation is significant in determining the extent to which different tools are helpful, appropriate and worth the investment of time, the range of technology used and the role played within social networks (as assistor to others or recipient of help). Technology orientation appeared to be a reference point in academic identity.

In the formation of practice a range of concerns influenced the choice of technology, these included: efficiency concerns, the potential of a tool to convey emotion, the suitability of the tool for the feedback message (i.e. structure or content), the perceived media preferences of students and the degree of fit with existent practices..

The quality assurance landscape influences the choice and use of technology. Quality management requirements are often associated with uncertainty, but the response by practitioners is mediated. This mediation can lead to improvised and innovative solutions, as practitioners try to adapt their approach to meet quality requirements, though it may also stifle practice as practitioners revert to paper based approaches to stay within the rules. Notably the second marking process can provide an opportunity for the dissemination of practices.
What is the process through which technology enhanced feedback practice develops?

A model at Figure 5.1 summarises the processes and shared spaces in the formation of practice at Robson University. This is not technology specific. At the heart of the model is the agent as reflector. The agent exercises their own choices; they can use their own “sui generis” at the simplest level to engage with technology or not to do so, but in a more granular way to shape an individual navigation multiple influences. The nature and outcome of the negotiation is a consequence of layers of personal history and experience, which have shaped values and belief, for example, about the role of feedback and about academic identity. Effectively the individual lecturer is negotiating their action with context but also with the internal self.

The next layer of the diagram, shown in blue, highlights that the reflective process works within the social spaces of the organisation. Interactions including: help and guidance, informal discussion, formal continuing professional development and shared projects all occur to influence adoption and use of technology, and to shape feedback practice. The proximity of this layer of activity is deliberately surrounding the individual layer; this is because in practitioner narratives high priority was given to social processes. Irrespective of the dominant type of reflective process at work social influence was important, though the use of the social layer was more pronounced in the actual decision making for the communicative reflectors, Marcus and Chris.

The next layer of influence shows the institutional landscape, including the quality management system, shaping practice. The quality landscape impacts upon reflections and discussions through the creation of rumours of practice, and through the definition of rules. It appears that influences, which are formal and institutionally conceived, manifest not only as an entity in themselves, but also through the social layer of practice. Likewise leadership, which also appears in the institutional layer is something which shows itself in the experiences of individuals and through the social process. The social layer appears to interact with the institutional layer to shape the choices of agents.
The layers in this diagram should not be seen as fixed and only offering an inward, single direction of influence. Archer uses morphogenesis as a term to describe the idea that agents can change the structures that change them; here each individual lecturer was part of the social system that was exercising collective influence and collective filtering of institutional factors. Phillip for example appeared to influence others through guidance, and Anna, by seeking clarity of quality procedures could potentially disseminate this information within the social network. Individuals shape these layers of practice and can be influenced by them.

Operating on the whole system from beyond, and shown in green within Figure 5.1, is a range of forces, these include:

a) Marketisation (as evidenced by references to student expectation and the fee environment);
b) Competition (as evidenced by a need to keep up with other institutions);
c) Internationalisation (evidenced by the need for feedback to cater for a diverse student base including international students);
d) Widening Participation (shown by the diversity of students in learning styles);
e) Technological normalisation (shown in pressure from schools and increasing student expectations).

These influences were not often overtly acknowledged. They were revealed in the layers of narrative – through for example Chris trying to meet the need of his international students, Flynn responding to the rising expectations of students and Ruth being exposed to ideas elsewhere which highlight the shortcomings in the organisation’s competitive position. The more hidden nature of these influences within narratives is reflected in the peripheral position of these factors on the diagram; this is not to diminish their significance though since the institutional landscape would be assumed to be strongly influenced by these factors (although this was beyond the scope of the study). In the experience of faculty, this layer appears to be more distant and removed and filtered by the institution and by the social context. These
factors are considered in relation to a range of other personal concerns, such as the need for efficiency.

Archer’s idea of generative mechanisms “whose powers may exist unexercised or be exercised unrealized, that is with variable outcomes due to the variety of intervening contingencies which cannot be subject to laboratory closure’ (Archer, 1998, p.190) is relevant to the most outer layer of the model. The factors identified here are not obviously realised by participants, yet the existence of a role for these factor is clear. The intervening layers appear to transmit and shape the manifestation of these powers and each individual integrates these factors with their own concern and priorities. Although they are an important part of the overall picture of practice, from the perspective of a lecturer they are more distant as intangible concerns.

Not all staff seemed to be obviously influenced by all factors but each member of lecturers had some link to one or more of these. The accounts demonstrate that these factors need to be revealed in some way if they are to be meaningful, for example by comments of external examiners, training events or through family experience. Lecturers became aware of the power of these forces on feedback and, more so, on technology based practices. These forces were not discussed in the abstract but were embodied within personal experiences. When awareness of these forces is coupled with student centred outlooks or a supply-sided consciousness, a sense that practice should be aligned with these expectations appears to be generated.
According to Archer (2003) the mediation of the influence of structures and the concerns of agents arise from three steps, which are restated in Table 5.10 below. Synergy can be seen between the development of feedback practice using technology, as depicted in the diagram above and Archer’s model. The process encapsulated in Figure 5.1 could be overlaid with the three-step process.
Table 5.10 Archer’s (2003) three-step mediation process and how it relates to the development of feedback practice at Robson University

<table>
<thead>
<tr>
<th>Archer’s three stage mediation model (restated from Chapter 2)</th>
<th>Relevance to the negotiation of feedback</th>
</tr>
</thead>
<tbody>
<tr>
<td>Structures shape situations in which individuals find themselves; these factors give rise to constraints and enabling factors (this involves objective forces exerting on the process).</td>
<td>The situations that lecturers operate in are shaped by structural and cultural influences. The university’s formal structures and embedded cultures, which are in turn linked to external influences and forces, work as constraints (such as quality assurance rules and the organisation of space and leadership) and enablers (such as the formal staff development programme). Structures are experienced directly (e.g. through the limitations of space) but also through the social dimensions of the university. Within the diagram at Figure 5.1, influence of structures is depicted in the outer zone (coloured green and also red): The influence may be direct or filtered through the social zone (coloured blue).</td>
</tr>
<tr>
<td>Agents form their own concerns and priorities, and projects (this is a subjective part of the process).</td>
<td>As a product of personal values and beliefs (for example beliefs about the role of feedback and how to engage students with feedback) and experiences (for example of close family and of prior study), lecturers formulate develop plans to address specific challenges or to enact their values and beliefs. These plans may or may not include technology. Some of the concerns that give rise to projects are indirectly brought about by social engagement, which can influence values or foreground different concerns. Within the diagram at Figure 5.1, the formation of concerns is depicted in the inner zone (coloured black). Fluidly though, influences from beyond this layer may shape concerns.</td>
</tr>
<tr>
<td>Agents reflect to subjectively find a way forward (this is a fusion of objective concerns and subjective considerations).</td>
<td>Faced with the influence of constraints and enablers and with the inner compass of beliefs and values, the individual practitioner has to find a way through. The navigation and negotiation of different factors is supported by internal thoughts and mediation, but also by social engagement. Archer’s reflexive typology infers that this way forward is located differently for different people; this was true in the data. Notably two lecturers sought much reassurance for their decisions and dialogically negotiated a way forward with others – these individuals operated as communicative reflexives. Others prioritised personal goals while others reflected broadly and deeply about the issues often going beyond the immediate concerns in their thinking. Within the diagram at 5.1 the stage occurs within the individual at the centre of all of the activity and influence.</td>
</tr>
</tbody>
</table>

Archer’s (2003) work was used to help operationalise the research questions and to locate the influences and process at work in the formation of practice. By revisiting Archer’s work the processes of practice formation have been further illuminated. Moreover the appropriateness of Archer’s three stage model of mediation in the context of academic practice can be confirmed in
this instance, with two particular points of emphasis i) the role of structures manifests both directly and indirectly through social practices, and ii) social practice shapes the individual values which in turn play out in mediation and project formation.

How does such engagement influence in turn the practitioner's values, assumptions, practice and context?
The majority of the impact cited by individuals related to their personal practice e.g. the volume and type of feedback and changes to assignments. The development of a new personal reflective space to review feedback practice through re-framing is significant and shows how technology can challenge existing practitioner understandings, for example about how students use feedback.

There was very little observation of wider contextual change that had resulted from practice. While corporate agency, manifesting in the clear intent to change institutional practice, appeared to be in-place it was not coordinated and there appeared to be a sense of powerlessness around how to bring this in to being. The change agenda was impeded by a sense of a leadership void existing in this area, yet in turn bringing in leadership was associated with a suspicion of the formal.
 CHAPTER 6 FINDINGS: EXTERNAL CASES

This chapter presents the findings from four interviews undertaken in four different universities. The account first gives a summary of participant stories to provide context and then it identifies strong similarities and differences between the lecturers’ experiences, and the experiences of those at Robson University. The treatment of the findings is influenced by the critical realist perspective, which recognises wider sampling as a means to better understand phenomena, and as a way of building and refining theory. While some references are made to Robson University’s findings, the cases are not fully combined until the final chapter.

The participants

Table 6.1 offers some key information about participants, and then a description of each lecturer’s experience is given in the form of a summary portrait. These summaries are the product of a double reduction process, which involved distilling the data from the original transcript to a portrait format, using the technique discussed in Chapter four, and then repeating process. Given the necessary abridgment within these accounts they are not presented in the first person like the full portraits (published by Arnold, 2014a). This is to ensure participant voices are not distorted through substantial editing. The use of italics in these accounts signifies where words are taken from the original transcripts.
<table>
<thead>
<tr>
<th>Name</th>
<th>Institution</th>
<th>Feedback technologies used</th>
<th>Examples of other technologies used in teaching and supporting learning</th>
<th>Years in higher education</th>
<th>Professional background before teaching</th>
<th>Discipline background (subjects taught where different)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Matthew</td>
<td>Hill Valley Met: Large metropolitan university (over 30,000 students); split site city campus, wide subject base; polytechnic history; new university (post 1996 university title).</td>
<td>Audio Screen capture (Screencast-o-matic)</td>
<td>VLE in distance learning including forums and online resources</td>
<td>23</td>
<td>Health sciences and practice education (hospital based)</td>
<td>Health sciences</td>
</tr>
<tr>
<td>Adam</td>
<td>Stone University; around 15,000 students; split site city campus; wide discipline base; University status post 2000.</td>
<td>Screencast Adobe in-design Typed feedback in Word</td>
<td>Tools for media design concomitant with the discipline PowerPoint Whiteboard</td>
<td>2</td>
<td>Creative computing, visiting lecturer</td>
<td>Digital media (user experience, motion graphics, audio, web design)</td>
</tr>
<tr>
<td>Tony</td>
<td>Megamet: Large metropolitan university (over 30,000 students); split site city campus, wide subject base; polytechnic history; recent university (post-1992 university title).</td>
<td>Audio Screen capture Track change Typed</td>
<td>Not available.</td>
<td>Not available</td>
<td>Geographer</td>
<td>Geography; Teaching in higher education</td>
</tr>
<tr>
<td>Sue</td>
<td>New Urban University; Broad subject base; around 25,000 students; Polytechnic history; University status post-1992.</td>
<td>Track change (email) GradeMark (inline comments, quick marks, summative comment)</td>
<td>Discipline specific technologies e.g. media equipment and broadcasting software</td>
<td>Not available</td>
<td>Media</td>
<td>Media</td>
</tr>
</tbody>
</table>
Adam

Adam finds that feedback plays a huge role in his teaching but believes its usefulness depends on how constructive and detailed it is. Typing is Adam’s minimum technology; when he first inherited a couple of modules, he looked at previous feedback, that was the way it was always done so typing was just following on from what was done previously. Word processed feedback is also an institutional expectation. *Over the last two years Adam has been dipping in and out of using audio feedback and screencast feedback.* Adam would like his own feedback to have been presented in this way and he found this a lot quicker than writing things down. For students the screen capture brought context, it was a bit different and was a bit less daunting. Adam tried to make his life easier and to utilise his skills to make the feedback process easier. He uses tools and technologies that he is using anyway in his discipline context. He only uses the screencast for formative feedback though because summative feedback needs to be perfect; because it is so formal, it’s difficult to use screencasts which are very live and raw, so it’s difficult to get them perfect. He is now experimenting with software called In-design. He wanted to reduce the skills gap between some of the multimedia students before they move in to industry, so through his Master’s study he developed digital workbook which could also be utilised for feedback, though the software doesn’t have much of a background in education, it’s more of a digital publishing tool. Adam is currently experimenting with this approach. His institution has a four-week turnaround policy for feedback and Adam feels that there is pressure by the institution to provide more written feedback. This year he’s been wrestling with sheer numbers of students, so used standard typed documents, created in Excel and pasted in to Word, to present all their feedback.

Matthew

Matthew is a teaching fellow for distance learning across the Faculty of Health Sciences. All of his teaching now is online. Matthew sees feedback as an on-going dialogue as opposed to an episodic point in time. Because his teaching is distance he’s had to look at different ways in which to use technology to provide feedback. He particularly believes that technologies
need to be accessible by learners because of the range of digital skills, which are quite low in some cases. Matthew tries to link student activity on a module to the draft submission, which means he gets to see a draft and students get some feedback at particular points. Dissatisfied by uploading and downloading text to support this approach, he started doing some audio feedback where he walked through their portfolio on screen and narrated. His aim was to introduce some variety in terms of the feedback. With the audio, Matthew also tried to bring a more human element to the feedback. Experimentally he wanted to see if students would actually come back after experiencing audio feedback, to extend the conversation. Matthew had positive student feedback on the audio approach but he found it quite unsatisfactory because when he played it back to see if it was okay before he released it, he would walk through the portfolio as if he was a student but found it hard to follow the pace of the audio and to cross refer between the assessment and the commentary. So when he stumbled across screencast-o-matic, he thought that would be much better. The students’ positive reaction has made Matthew and colleagues think about extending their use of screencast in to module resources to present material in different ways.

Matthew is always on the lookout for new things to use and goes to events for ideas about ways in which you can maybe utilise technology to enhance his work. There’s been a big drive at Northern Met centrally encouraging online submission, and then marking via Turnitin.

Tony

Tony works in a central learning innovation team in his large metropolitan institution. He contribute[s] to the post-graduate masters in academic practice but his background is in biogeography. For Tony, feedback is the lifeblood of the relationship between him and his students. A chain of events formed his views. When Tony taught biogeography he moved offices and his biggest task was to get rid of all of the feedback that remained uncollected—it wasn’t valued enough by some students for them to collect it. He recognised a reviewed approach was needed. It was a key moment for his reflection on feedback. At the same time Tony had a growing interest in computing and so undertook a master’s in computer science. At this time he can recall a
demonstration of a video screencast that showed how to format a document; Tony was immediately struck by the potential this tool had for feedback. He started to diversify his feedback about six years ago. When he returned to undertake teaching he felt he could offer more than feedback on a standard form. He did have another agenda to demonstrate lots of different technology so that his students (as developing lecturers) could experience and so pick and choose the technologies that they wanted to use.

Tony was really surprised at the incredible degree of resistance that came back from some colleagues; he believes his practice was seen as indirectly bullying other people into doing it as well. Tony finds more openness by colleagues as the technology is becoming more robust and reliable. Nevertheless he believes willingness to use a computer in feedback still polarises people – some embrace it and some resist it. Tony’s practice is now spilling in to his thoughts about wider pedagogy, He’d like to get students to be submitting work in audio and video format for formal assessment.

Sue

Sue spent about 35 years in the media production. She was asked to teach radio production on a part time basis; ten years on she is the award leader. Sue believes feedback has to be a very substantial part of [learning]. But she also finds that two thirds of students ignore it. She believes that giving it to them fast helps. Four weeks is the university target, but Sue likes to target two weeks to get feedback to students; she finds that the longer it is left, the less likely they are to read it and to take interest.

Sue doesn’t do anything else on paper. She’s never been able to compose with a pen and has always written on a machine. In terms of feedback … she started off just putting the work through Turnitin to just check for plagiarism… and she used to download the stuff and then email it back with comments on. But now Sue uses the Turnitin system more fully. It enables her to write her own essay at the end and give summative feedback. She finds the comments that you put in as you go through more difficult to use but
believes that it is still quite effective to be able to have comments already written. Sue believes it does speed up the marking. She likes the fact that it automatically puts the mark up and makes the feedback available...she doesn't have to think about it. Efficiency is definitely part of the benefit and motivation. [H]aving favourite phrases there just to be able to click them and transfer them across saves a lot of time. But it’s also better from the students’ point of view. Because they are getting feedback more quickly, because they can read the writing and because the feedback is more thorough. Sue finds Blackboard and Turnitin to be diabolical pieces of software though; she would love something more efficient.

Once Sue had got to grips with the technology she tried to get colleagues to use it, to get that element of consistency. As programme leader if Sue says she wants it done this way, then it usually gets done this way. The rest of the department is also being encouraged...it has at least one technological dinosaur in there who has to be pushed, pulled and dragged into every advance. He has just about got the hang of email...but Sue and colleagues are working on him.

Motivations, beliefs and concerns of lecturers
The account now explores participants’ feedback and technology orientations and the specific processes at work in relation to media selection. This focus helps to shed light on the deliberative concerns of participants.

Feedback orientation
The student centric realist orientation label, developed through the Robson University cases, resonated with all of the participants. In their own terms Matthew, Adam, Sue and Tony all describe the space of operational optimism where formal feedback can make a difference depending on both the quality and nature of the feedback product, and a range of factors beyond the tutor’s control, including schooling experience and student independence, learning goals, and grades. Notably, Sue and Tony stress the timing of feedback, much more than the quality, as being essential to optimise the benefits of feedback for students in the space of engagement.
Matthew, Sue and Tony showed that the dialogic feedback emphasis could be fully compatible with their sense of an optimistic, yet realistic working space for formal feedback. They did not juxtapose summative and formative, or formal and informal; they conceived that episodic feedback, could take on the characteristics of dialogue. This conception of feedback appeared to draw Matthew and Tony to audio technologies as a way of emphasising or extending the benefits of dialogue, and in Sue’s case swift returns were valued to keep a sense of purpose in an ongoing dialogue.

The findings show that lecturers have very different viewpoints on what the principal qualities of good feedback are. There is convergence in the literature on what makes effective feedback (see for example Ball, 2009; Bols & Wicklow, 2013; Kahu, 2008; Nicol, 2010; Nicol, Thomson and Breslin, 2014; Scott, 2014) but looking across all the participants in this study, individual lecturers appear to give primacy to different aspects such as timing (Sue, Tony) and dialogic features (Matthew, Sue, Tony), and in the case of Robson University individuals gave priority to fairness and grade justification (Flynn, Margaret), personalisation (Phillip) and providing clarity on what good performance is (Chris). The idea that individual lecturers prioritise different features of feedback raises questions about the extent to which teachers can really attend to all the features of good feedback as depicted in literature. The point then raises the question, *is there a capacity to the number of deliberative concerns when forming feedback?*

**Emerging theory**

As a result of dialogic approaches being used in these cases in a way that is totally compatible with both formal and informal feedback, the feedback orientation that arose from Greta’s experience needs to be refined. Greta’s beliefs about dialogue were associated with a rejection of the value of formal feedback, but the rejection of the formal is not inevitable with a dialogic focus. For this reason the ‘Feedback as Process’ orientation should be renamed as ‘Feedback as Process (Formal Rejectionist)’ to offer a more accurate description of Greta’s outlook. This refinement fits with Scott’s (2000)
clarification that expanding the number of cases in a critical realist study helps refine the emerging theory.

**Technology beliefs**

Tony displayed the same characteristics as the super-users at Robson University. He appeared to be an evangelist of technology for learning, identifying new opportunities for technology to make a difference, influencing the practice of others and repurposing technology to serve pedagogic ends. Tony’s year out of lecturing to pursue studies in computing indicates the internal drive that is present to engage with technology. He is involved in influencing and formally leading technology for learning in his university and had even partially changed roles to take this responsibility on. Adam and Matthew aligned with the technophile category with their ongoing search for technology to enhance practice, their active engagement in developing practice and their preparedness to tolerate difficulties when developing new approaches.

Sue did not readily align with the existing categories. She was a confident user of technology but she was not a technophile. Her self-identity was not overtly associated with innovation; she relied on institutional training and did not invest time in trailblazing new approaches. At the same time Sue did not fit in the category associated with ‘having a go’ since she did not conceive that technology was an extra that needed special consideration or deliberation, it just needed to be used where appropriate. She did not appear to have a predefined capacity to spend on technology. Sue is a native user of technology as the vignette below infers.

“I don’t do anything else on paper. I’m not used to actually the physical hold of the pen anymore and I never have ever since computers existed, or even typewriters. I never have been able to compose with a pen. I have always written on a machine” (Sue).

Sue experiences some challenges for which she seeks assistance, but she does not appear to get flustered and she does not see her own practice in
any way to be exotic, despite being an early adopter in her team. The introduction of a new technology orientation category, encapsulated in the label ‘native moderate’, adds a further level of granularity to the continuum of approaches. The two defining aspects of this orientation are i) the assumption that technology is ordinary and, ii) the ease with which technology is accepted in to the mix of practice. Sue’s approach to technology reinforces the requirement to look below the surface to understand how individuals conceive the tools that they use.

The way in which the feedback orientation that grew out of Greta’s experience needed to be refined after the introduction of more cases highlights the need for some caution in introducing a category based on one experience, but this descriptor is adequate to depict the experience under consideration. It is added to the orientation typology only as a representation of the data and it is not purported to be a transferable descriptor.

The four interviews have reinforced, refined and extended the models available to us to understand lecturer relationships with technology. Table 6.2. provides a summary of all of the categories of technology orientation. Compared to other models which show individual relationships with technology, for example, Rogers (2003), and Stein, Shephard and Harrison (2011), this typology is highly specific to both the UK higher education context and to the issue of feedback. Moreover the addition of the ‘moderate native’ category reflects the normalisation of technology that has taken place since Roger’s categories were first formed in the 1960’s.
Table 6.2 Technology Orientations Summary

<table>
<thead>
<tr>
<th>Category descriptor</th>
<th>Confidence</th>
<th>Frequency of tools use</th>
<th>Connection of technology to identity</th>
<th>Leadership in technology use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Super champion</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Technophile</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>Medium</td>
</tr>
<tr>
<td>Moderate native</td>
<td>Medium</td>
<td>High</td>
<td>Medium</td>
<td>Medium</td>
</tr>
<tr>
<td>Have a go-ers</td>
<td>Medium</td>
<td>Medium</td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td>When it really matters</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
</tr>
</tbody>
</table>

The participant stories detail four individuals who are rational technology users in their workflows, they seek efficiency, simplicity, and convenience. Sue explained that as a journalist technology was central to all communications, and therefore it would be unnatural and time inefficient for her to approach feedback in any other way. Adam explained that he used an assortment of tools in his personal life and in his academic discipline, and these crossed over in to his professional routines to make them easier. These observations corroborate the importance of prior professional role in forging a relationship with technology, and they reinforce the idea that use and development of technology in feedback may be conceived from workflow considerations as well as from perceived pedagogic benefit.

**Technology Selection: A negotiated process**
The participants internally negotiate their choice of media for use in feedback. Tony summed up this as “a matching exercise. [where] you match the
technology to the right type of feedback”. This approach reinforced Buchan’s (2011) view that technology is employed because of a perceived need. The concerns within this matching exercise included: time available to provide the feedback, the type of assignment and the nature of the feedback sought, student emotions, fit with existing practices and continuation of practices undertaken by tutor’s previously running a module (inherited practices). Vignettes to illustrate these points are offered below:

- “I can produce quick and dirty audio feedback in a much more time efficient way than writing stuff down or doing a video screen capture” (Tony).

- “I find that if you are trying to improve student's writing skills then you’re probably better off providing them feedback in written format so that you can demonstrate good writing skills” (Tony).

- “for them [the screencast] was something that they could refer back to, it was a bit different and something that was a bit less daunting” (Adam)

- “It was straightforward for me because I had the systems in place already, I knew where I was going to host it, I had a hosting site … I knew that I could keep it confidential, that I could set passwords, I knew I could make it private so only the students could see it” (Adam).

- “When I inherited a couple of module that I deliver now, looking at previous feedback it was the way it was always done so it was just following on from what was done previously” (Adam).

Technology choice was also influenced by beliefs about how students engage with different media approaches. Sue particularly ruled out audio feedback because of a belief that students simply don’t have the capacity to concentrate and play it back, and she had a sense that students preferred short text:
“I’m conscious that there is, in Turnitin, a facility to give verbal feedback and it’s something that I’d quite like to experiment with. But I haven’t done it yet. I don’t know how kids would react, whether they would bother because, again, they’re used to short bits of writing. They’re used to Facebook. They’re used to WhatsApp. They’re used to texting. And I’m not sure whether they bother to listen to anything that lasted more than twenty seconds”.

Sue was not alone in her consideration of student concentration, recalling that Angela at Robson University identified students’ limited attentiveness as an issue in shaping her approach. Sue’s belief that student feedback preferences were being influenced by their internet usage patterns fits with the findings of Scott et al. (2014); though this resonance does not advance understanding of the actuality of this phenomenon (that would take research from a student perspective) it does show that others share the interpretation of Scott and colleagues.

Feedback practices were also linked to beliefs about students’ prior schooling, which was seen as not encouraging independence. Sue’s explanation of this situation used words that were identical to Ruth’s e.g. “spoon-feeding”. Sue also identified widened participation as influencing feedback practices, as increasingly students from diverse backgrounds need to be supported. These combined influences led Sue to offer feedback in a form that was ‘little and often’. Sue’s explicitness about factors effecting student behaviour shows that phenomena in the real strata, located through the Robson cases, are experienced more widely. Similarly Matthew shared Ellie’s conception that students had limited technical readiness to engage with tools for learning, this influenced their deliberations as to what technologies were appropriate.

The internal negotiations of Adam, Sue, Tony and Matthew attended to two issues in the mediation of technology choice that were not present at Robson. Their narratives highlight concern for the consistency of the student journey
with feedback and technology and they also observe the potential for different feedback technologies to support the development of professional attributes or behaviours. Each point is now explored.

Matthew and Sue prioritised uniformity of technology across the student journey. By example, Matthew believed that students might be challenged by the sudden appearance of different technologies in their learning journey. He recognised that busy students who had to manage family, work and study had a lot to take on board and may become distracted by grappling with new tools without a clear purpose. Matthew’s concern was exacerbated by doubts about the ability of students to engage with different technologies for learning due to a lack of prior preparation in schooling (differentiated from technologies related to their vocation or discipline). In deep deliberation Matthew mulled the relative benefits and disadvantages of variety and uniformity. As a result, he synchronised his feedback approach with the rest of his course team, so that some course wide principles give consistency to the feedback journey.

Matthew, Adam and Tony linked their use of technology in feedback to the encouragement of discipline specific professionalism in students. Adam was exploring specific media rich design tools for feedback; these are the same tools that will be used by his students in the creation of media objects and in using them for feedback he seeks to model professional possibility. Tony uses a variety of media that will in turn be employed by his students in their feedback to others in their role as teachers, while Matthew uses audio feedback to replicate the professional dialogue associated with his discipline area. He explains:

“[audio feedback] feel[s] more like the conversations you have in practice, about an aspect of a particular patient or about staff member performance. There’s very much that professional conversation dimension to it, I think, rather than formal rigid feedback on a history assignment or something like that it just feels like an extension of the
dialogue that we’ve had with them when they’ve been students in practice” (Matthew).

Within Robson University, Ellie recognised that some students had a lack of enthusiasm towards receiving electronic forms of feedback, but she believed that their rejection of such approaches was not in keeping with the expectation that the students themselves would need to provide feedback in a digital form to clients once they were in work. This realisation was a key reason for Ellie’s persistence with technology in the face of perceived student indifference. Essentially Ellie wanted to use feedback to alert students to the reality of digital practices. This feature of Ellie’s story was only highlighted by returning to the Robson University data after the external cases had been considered; it provides an example of where the use of more cases can generate new insights from existing data by providing different lenses.

Watling et al. (2013) and Harrison et al. (2014) recognised that feedback is made more meaningful by an association to the professional context in which it is intended to have an effect. In the aforementioned examples, the participants seek to align the feedback mode with desirable professional behaviours by carefully selecting the media type that is associated with the relevant field. This is seen as valuable because it enhances the authenticity of the context of feedback, but it is also seen by lecturers as important because the engagement with technology format creates a specific learning opportunity relating to professional communication; whether this is realised by students is an area for further consideration. The findings build on the work of Watling et al. (2013) and Harrison et al. (2014) by showing that technology is being used with the intention of enhancing the professional relevance of feedback.

The institutional landscape
Across the four lecturer accounts, the quality landscape, workload pressures and the social networks of practice were all cited as influences on the choice and use of technology in feedback.
Quality management and the role of grey space

All four participants cite the quality management landscape as a factor in the development of practice, but the nature of that influence is varied. Sue’s use of technology is mainly attributable to her belief that rapidity makes a difference, but additionally she recognised institutional requirements for feedback were emerging and she wanted her course team to fulfill these before they were imposed. Sue’s engagement with an emerging institutional system (GradeMark) appeared to be an extension of her sense of professionalism and a pragmatic response to an anticipated change.

Adam recognised that some of the approaches that he was taking were formally unsupported by the institution. He had three main concerns:

i) His screencast approach was not “polished” and therefore not compliant with the standards expected for summative feedback;

ii) The technology was not accessible easily by external examiners who operated in an official space using clear protocols;

iii) That data was held in a cloud space, which “probably” did not comply with the privacy requirements of his institution.

Adam experienced a tension between aspiring to a pedagogically sound and efficient approach to feedback, while needing to meet quality requirements. Adam explained: “For summative feedback, certainly at the Stone University … [to use] the screencasts or my own methods, I would have to fight hard to contravene the existing front sheet, I could do [the screencast] in addition… but then we are talking about more workload”. For the summative, feedback he therefore employed text.

Adam supposed that any institutional formalisation of his informal practice would likely be inferior:

“I think the central IT team are trying to develop and to offer some kind of internal service … the central one is probably going to be quite clunky. … if there was something available internally, then it would need to be very good to beat what I’ve already got”.

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Sue also noted frustration with approved technologies, she used the term ‘clunky’ to describe GradeMark, she believed that there were better systems available but was persevering because it was the university’s system of choice. This reinforces the findings in literature that rigid interfaces, particularly in text based systems, can act as a deterrent for tutors (Burrows & Shortis, 2011; Spencer, 2006), though where the ridged system is formally adopted by institutions, tutors may be more likely to persevere. Like Adam, Sue observed that there were innovative approaches being developed by colleagues at the margins, which sat outside of the recognised approach.

Matthew appeared to work in a different type of quality landscape where he was empowered to negotiate decisions about the provision of formative and summative feedback; he had worked with his external examiner to normalise the media rich approach, even for summative approaches:

‘[the feedback approach] is not being driven by the quality agenda … but obviously it has got to be done with that in mind. Clearly one of the things in terms of the transition from written to the audio to the screen cast has been to consult with external examiners for example in terms of how readily available and accessible that is going to be to them. The great thing at the moment about the screen cast is that the external can just access the works via the link’.

While Sue plans, Adam complies and Matthew negotiates, Tony appears to work as a change agent. Tony is conscious of the institutional change needed to fully embrace emerging practice. Like Adam, Tony observed the grey space of cloud technology to be a source of possibility, but he also perceived it as a source of anxiety because cloud space has limitations on privacy and may not be regarded as secure enough to use for student feedback. Tony worked with a central team to develop equivalent systems that were fully functional but which did not force lecturers to make the choice between compliance and providing pedagogically considered modes of feedback. Clearly Tony’s engagement with the quality issues is informed by his technology orientation.
Table 6.3 summarises the variations in the quality landscape and the associated teacher response. These findings further reinforce Bailey and Garner’s (2010) explanation that feedback is in part a product of the policy landscape. A fuller study of the impact of policy on feedback practice would be valuable.

**Table 6.3 Institutional policy and its relationship to summative assessment practices**

<table>
<thead>
<tr>
<th>Name</th>
<th>Institutional policy</th>
<th>Impact on Practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Matthew</td>
<td>Practitioner autonomy to decide on the mode of delivery. Minimum requirements of turnaround times. Minimum requirement for clear criteria.</td>
<td>A patchwork of practice with concern for meeting student expectations and needs. A range of tools can be utilised but this can lead to inconsistency.</td>
</tr>
<tr>
<td>Adam</td>
<td>Requirement to type feedback and return on a standard form within a three week period.</td>
<td>Students receive a consistent minimum standard but innovation in summative feedback is limited, as systems do not dovetail with alternative media.</td>
</tr>
<tr>
<td>Sue</td>
<td>Impending requirement to utilise GradeMark.</td>
<td>Students will receive minimum standard but innovation in summative feedback is limited as practitioners use only one formal system.</td>
</tr>
<tr>
<td>Tony</td>
<td>Institutional systems embrace a range of media possibilities.</td>
<td>Autonomy in choosing the approach for feedback in line with the mediated concerns.</td>
</tr>
</tbody>
</table>

As with the cases at Robson University, the lecturer narratives have highlighted more about the effect of quality processes and expectations on the negotiation of feedback practice. Specifically the four stories show the need for practitioners to negotiate tensions between official and unofficial tools, to manage the aim of developing practice with institutional compliance requirements.

**Workload pressures**

Workload and time saving was a strong emerging theme. Sue and Adam prioritised efficiencies, whereas Matthew was less concerned about time savings, stating that he would only be concerned by any practice that resulted in a significant increase in time commitment. These cases reinforce the
typology of attitudes to efficiency formed through the Robson cases. Additionally, Tony recognised work pressure as an important factor in the rejection of feedback technology and so he undertook to create an evidence base to convince colleagues of the time saving. He is exerting corporate agency to drive change.

Adam stated his conviction that screencast approaches saved him time, but when under pressure with student numbers he reverted to text. There appeared to be a difference between his espoused theory and theory-in-use. Adam’s espousal of time benefits *may* be connected to maintaining a technology rich identity or *could* be connected to his participation in an alliance of practitioners whose agency seeks to transform practice, and make a case for change, which would be undermined by vocalising time based challenges. Adam did not have an outspoken change agenda, like Tony, and he was not trying to convince others to engage, but he was aware of his institutional status as innovator, particularly amongst senior colleagues who had shown interest in his work. Tony’s remarks that feedback which uses computers “polarises” lecturers resonates alongside the concept of fractured practice. So it follows that enthusiastic practitioners engaged in using technology may not wish to fuel this divide still further, and may bury the complications in their narratives. These explanations are speculative and arise from piecing elements of Adam’s story, with clues about the wider higher education and academic community, from other stories. This aspect of the findings shows a limitation of this research in its focus on espoused conceptions of practice rather than actual practice. It is also significant because it raises questions about how workload affects the ability of teachers to consistently engage in technology-based practice.

**The role of the course team**

For Matthew and Sue the programme team is critical for developing practice. Matthew participated in discussions about practice and described the brokering of approaches:
“When we started out [developing the programme] … we locked everybody in the room and didn’t let anybody out until we came into some consensus about a pedagogical approach that we would adopt. Once we got our agreement then we took it forward as a team so they get that experience and that continuity module to module as they progressed through the program”

By contrast Sue led a programme team and undertook to guide staff to a common approach, in part to meet emerging university requirements and in part for the consistency of the student experience. Sue believed that her modelling of the practice and directive approach would influence others to join her. Matthew and Sue both emphasised consistency in their concerns around technology mediation; it is proposed that the presence of consistency concerns give rise to work across programme teams though it is equally possible that working in programme teams ensures that individuals are more conscious of the benefits of uniformity.

By contrast to Robson University, little emphasis on the casual network was present. This could be attributable to my outsider researcher status; within Robson University familiar names were cited in interviews without a requirement to explain who the referenced person was and these relationships may be less penetrable in unknown context. The emphasis on the course team was not present at Robson University but was striking in two other contexts. This shows the variety of socio-cultural contexts in which practice is formed. The role of team working is little understood in the context of feedback and technology. While the Viewpoints methodology to designing curriculum advocates joined up thinking across programmes (see Sheppard, 2013), there is no specific literature about the ways in which the organisation of, and interactions within teaching teams influences the student feedback experience or feedback delivery strategy. This is an area where more research could usefully inform practice.
Professional development

For Matthew and Tony, as meta-reflectors and technically engaged individuals, high impact professional development came through exposure to ideas and tools. Tony cited encountering Bob Rotherham’s work on the benefits of audio feedback as being especially influential in challenging assumptions, while Matthew valued seeing what was available to inform his options as a practitioner. For Sue the role of professional development opportunities was very important also, but she particularly valued the ‘how to’ sessions which support the implementation of technology. These findings reinforce those of Robson University where individuals with different degrees of technical confidence benefited from fundamentally different opportunities for development. This contrast of approaches serves to highlight the need for staff developers to provide qualitatively different types of opportunities for different groups of teachers.

Impact

As with lecturers at Robson University Adam and Sue observed increased depth and coverage in the use of screen capture and GradeMark respectively. Likewise, Sue used the textual feedback to construct in depth one-to-many feedback for formative use in class. She describes that she would not have been able to do this easily if working by hand.

In one instance the employment of media in feedback has had an impact on the use of media in wider teaching and the creation of support resources. Matthew describes that:

“it has made me look at again is the way in which I present materials to learners in terms of content delivery and certainly in terms of using this whole video and audio aspects to try and enhance the ways in which that’s delivered. … The nature of it is such that it’s making me, .. evolve the way in which I design the module, put the materials together and how they’re presented”

Bob Rotherham was a National Teaching Fellow researching audio feedback; Tony encountered him in a workshop in circa 2008.
Similarly, Tony is considering how the media used in feedback can be utilised by students in the production of assessment, such that the learning conversation occurs in a more flowing way. Tony recognised that different feedback media lend themselves better to different types of conversation and so is now contemplating whether these benefits would be realised by changing the media of assessment.

While there are identifiable changes resulting from the adoption of technology, there was no evidence of the mind-set shifts evident at Robson, where technology drove some imagination of feedback and some questioning of student use.

**The contentious feedback landscape**
The fractured feedback landscape referred to at Robson was less stark in the external cases; this may be because of different institutional policies or requirements or, it could be about the preparedness of individuals the reveal tensions in their own context to an outsider. Nevertheless some evidence of tensions in practice was evident. Tony particularly identified how he sensed a tension from colleagues who did not want to utilise technology; he recognised his image in their eyes as a technology “bully”. Matthew also noticed that some colleagues would always refuse to come along and embrace the tools available for the role; though he saw it as inevitable in a university landscape. Sue too, had a degree of acceptance that there was simply “no changing some people”. Embedded in all of these views was a sense that change should be brought about. The fracture lines in the external cases were firmly concerning the technological dimensions of practice, whereas at Robson University the tensions spanned both feedback and technology concerns.

**Summary**
The four external narratives have further corroborated the existence of different, complex relationships with technology. The data highlighted another way in which lecturers might act within the space of optimism to engage students; the emphasis on speed, rather than necessarily constructive quality
was noted as a response, and it is shown that this concern follows through as a thread in how technology is mediated and utilised. More has been understood about the concerns, which determine choices about technology in feedback.
CHAPTER 7 CONCLUSION AND RECOMMENDATIONS

The final chapter summarises the findings from this study and in so doing it revisits the research questions for all of the lecturer experiences within the study. The chapter draws on literature to further establish the original contribution of the research. Finally, the chapter proposes recommendations for educational development practitioners, for institutions of higher education and for further research.

Research summary

This investigation set out to explore the experiences of lecturers as they select and use technology to provide student feedback. It considered assignment feedback that was a planned part of the student journey, and it excluded spontaneous in-class feedback and exam feedback. The range of technology used by participants included aspects of the GradeMark tool, audio tools, screencast, track changes, PDF annotation and typed feedback.

A critical realist perspective was adopted and Archer’s work (2000; 2003; 2007) informed the development of a guiding framework for the research. A narrative methodology was used to capture the story of each individual lecturer. Twelve interviews were conducted in my home institution and four were included from different universities. Analysis of the interview data resulted in self-contained stories, known as profiles, from which learning was drawn. The transcripts were also coded to locate commonality of experience.

Trustworthiness and authenticity

Maxwell (2012a) recognises that within critical realism, trustworthiness is highly contextual and not reducible to procedural protocols; he suggests, rather than concern with rules, realist researchers should make clear how their claims are founded given the inevitable fallibility of interpretation. Similarly, Webster and Mertova (2007 p.4) suggests that narrative research should aspire to produce “supportable” and “well grounded” findings, and citing Amsterdam & Bruner (2000) they add that it is enough for representations to “ring true”.

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I will not revisit every action which contributed to the research being trustworthy, but it is important to cite some of the key steps that ensured claims were grounded. Participants checked their respective narrative accounts for representativeness, analysis used established strategies and I used critical friends to aid my own sense-making and to check that findings did indeed “ring true” (see for example Arnold, 2014b). Extensive use was made of the data vignettes to illustrate claims. The narratives that informed the analytical process have been published and are exemplified within Appendix 3. Despite these steps the findings should be read with an awareness of the mediating role of the researcher.

**Answering the research questions**

In forming this final summary it became clear that an additional research question had been answered by the findings: the data had identified why individual lecturers do, or do not, use technology for giving students feedback. The research question “Why do individual lecturers engage in using technology for feedback?” is retrospectively introduced. Each research question, including the extra one, is addressed in turn.

**Why do individual lecturers engage in using technology for feedback?**

The research revealed two main underlying reasons for engaging with technology. One group of lecturers believed their creation of high quality feedback could make a difference to the learning of some students. They also believed that technology made a difference to the quality of feedback and the likelihood of students to engage with it. For this group of lecturers, pedagogic concerns were the primary driver. In some cases this concern was activated as a response to particular issues arising, for example as programmes migrated to distance delivery, access became a concern. Where individuals lacked confidence or competence with technology, formal or informal support was used to compensate and to enable the feedback aims to be fulfilled. A personal mandate for action around feedback was formed out of concerns within their existing practice and out of their internal beliefs. In their internal negotiations, and sometimes in external negotiations, technology was
conceived as a means to align practice needs and beliefs about learners and learning. This detailed description within the findings illuminates aspects of the internal conversation that underpin the development of practice. Lecturers who had a strong sense of ‘being a professional’ perceived both technology use and feedback quality to be integral to that identity. The reason for engaging is not reducible to the dominance of technology or of feedback. Underlying engagement is primarily driven either by ‘student’ concerns or by concern for ‘self’. These two concerns are not mutually exclusive but the concern for pedagogic aspects was more dominant.

These findings begin to answer Mathisen’s (2012) call for us to stand back and consider why we use technology. The research illuminates a complex set of beliefs, priorities and practices at work together which takes our understanding beyond appreciating technology’s use in feedback as just a solution to a problem; the formation of practice has been shown to be a much richer and all encompassing process.

The question “why not engage with technology?” was addressed only briefly and with necessary sensitivity. One of the lecturers did not engage because her beliefs about how to make a difference to students were not compatible with the notion of formalised feedback. In turn this lead to the belief that technology would not help. The other lecturer who was not using technology did not engage because his beliefs about being a professional academic led him to prioritise other activities over investing time in learning to use technology; this individual had a very positive feedback orientation, he just avoided using technology production for fear of distraction. This strand of the investigation enabled a personal appreciation of the positions of those who reject technology for feedback. Although small in number, these insights indicate the richness of understanding that can be gained by engaging with those lecturers who may othered by their absence in the discourse around technology and feedback. In Archer’s (2000) terms these lecturers can’t be seen as entirely passive; they are making conscious choices about their practice, again informed by their internal beliefs and operational constraints.
Lecturers engage with technology for feedback when they believe it will make a difference to student use of feedback or where it will enhance their own professional self. By mirror image, lecturers do not engage with technology when they believe it will not make a difference to student use of feedback, or when it will impede the enactment of their professional identity. Prior professional practice and study experiences were very important in shaping these personal belief systems. Beliefs are not entirely static though; social relations made feedback and technology attitudes fluid. These findings particularly contribute to our understanding of the formation of feedback decisions by faculty. Literature described in chapter two highlighted the almost universal challenges of feedback, relating to the frustrations of both staff and students around feedback quality and student engagement with feedback. To explain differences in practice literature has previously considered resource constraints (Gibbs and Simpson, 2005), programme design choices (Parkin et al. 2012) and different emphasis or techniques used in the construction feedback. This research shows that in order to understand why decisions are made about feedback we must look at issues of academic identity, beliefs about student behaviour and beliefs about the role of feedback. Moreover it is clear from the research that beliefs about the role of feedback are not reducible to a single simplistic statement; individuals may possess multi-layered views with nuanced appreciation about what is effective and why.

**What are the influences acting on lecturer use of technology in relation to the provision of formal student feedback?**

While underlying beliefs can be seen to support decisions to engage with technology for feedback, the way that practice was initiated and the actual experience of practice varied. Lecturers held different concerns and priorities and they exercised different choices in the use of technology.

The selection of technology was influenced by a set of visible and immediate concerns including the required balance of structure and content within the feedback product, the potential of the media to portray emotion in messages, scalability, consistency (where class sizes are large), likelihood of the
technology to engage students, potential of the technology to support or develop skills within the discipline context, similarity of new practice to existing practice, the ability of the media to add variety to the student feedback experience, workload pressures and available technologies. While these issues are of obvious importance, there are numerous other influences which are less visible, but still highly significant.

Returning to the critical realist conception of a layered reality is helpful to unpack this. Influences on practice were found:

- ‘Out there’ i.e. in a space beyond obvious comprehension
- ‘In here’ i.e. in the actual places and spaces of practice
- ‘In me’ i.e. within an individual’s own values, beliefs, interpretations and history.

In critical realist terms, influences are found in the real, actual and empirical layers. The determinants of practice found in the data are summarised in Table 7.1.

**Table 7.1 A summary of influences on lecturers’ choice and use of technology in feedback**

<table>
<thead>
<tr>
<th>Real</th>
<th>Actual</th>
<th>Empirical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marketisation of higher education</td>
<td>Institutional pressure for high standards in feedback</td>
<td>Perceptions of student expectation</td>
</tr>
<tr>
<td>Students as consumers</td>
<td>Social practice (modelling, introduction of new ideas, spatial proximity to practice)</td>
<td>Professional history</td>
</tr>
<tr>
<td>Technology normalisation</td>
<td>Quality assurance rules</td>
<td>Own family's experiences in higher education</td>
</tr>
<tr>
<td>Widening participation</td>
<td>Quality assurance practices</td>
<td>Professional identity</td>
</tr>
<tr>
<td>Requirements for accountability</td>
<td>Reflective mode</td>
<td></td>
</tr>
<tr>
<td>Internationalisation</td>
<td>Continuing professional development opportunities</td>
<td>Prior experience with technology</td>
</tr>
<tr>
<td>Fee environment</td>
<td>Exposure to external practices</td>
<td>Confidence with technology</td>
</tr>
<tr>
<td>Workload</td>
<td>Perceptions of student expectation</td>
<td></td>
</tr>
<tr>
<td>Class size and learning outcomes</td>
<td>Professional history</td>
<td></td>
</tr>
<tr>
<td>---------------------------------</td>
<td>----------------------</td>
<td></td>
</tr>
<tr>
<td>Organisation of the teaching team</td>
<td>Own family's experiences in higher education</td>
<td></td>
</tr>
<tr>
<td>Leadership in teaching</td>
<td>Professional identity</td>
<td></td>
</tr>
<tr>
<td>Type of assessment</td>
<td>Career stage</td>
<td></td>
</tr>
<tr>
<td>Student's current use of technology</td>
<td>Disciplinary attributes</td>
<td></td>
</tr>
</tbody>
</table>

Opaque forces from the real domain manifested in the actual domain of practice and were interpreted in the context of personal history and beliefs. The empirical domain provides the lens through which external influences are given meaning. For example awareness of student expectations came to light through external examiners, continuing professional development events and other events in practice, but the power of student expectations was accentuated and given meaning by a lecturer's own experience of being a student or by the experience of closely knowing students. Table 7.1 is not intended as a menu where factors are 'ticked off' as simply present or absent in each individual case; the lists and layers represent factors that may be at work but which are inextricably interlinked. Table 7.1 can be used to prompt thinking about which factors can be changed and which cannot. Some of the recommendations for practice, presented later in this chapter, relate directly to the opportunities for change – for example, quality assurance was a highly influential factor in practice and the university has a high degree of control over this.

From the perspective of faculty themselves, the factors listed in Table 7.1 translate to a hierarchy of influence (as depicted earlier at Figure 5.2) wherein the closest layer is most prominent in narratives about practice and the factors 'out there' are present, but are not obvious. Lecturers feel that they may be able to exert some local influence for changing practice, but less so
amongst the more remote influences. Drawing upon Archer's (2003) three stage model of how individuals mediate structure and agency lecturers have many variables to factor in to their internal dialogue: they have great variation in their beliefs which are in turn highly nuanced, and they have different approaches to reflecting. In line with Archer's own conclusions, it is easy to see why there is such diversity. The findings confirmed that the influences on feedback technology are similar to those encountered in relation to other technologies in higher education. Table 7.2 summarises where literature regarding other technologies holds true for feedback technologies.
Table 7.2 The relationship between influences on technology use in higher education identified in literature and those identified in the research

<table>
<thead>
<tr>
<th>Influential factor</th>
<th>Where cited as an influence in a general sense</th>
<th>Evidence in relation to feedback technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student expectations</td>
<td>Knight &amp; Findlay, 2013</td>
<td>Student expectations were cited repeatedly as an influence on getting started with technology.</td>
</tr>
<tr>
<td>Local policy</td>
<td>Gu et al., 2012</td>
<td>Practice was influenced by quality assurance policies and through the anticipation of policy to mandate digital feedback.</td>
</tr>
<tr>
<td>Teacher training</td>
<td>Andersson &amp; Grönlund, 2009</td>
<td>The importance of a range of training events was evidenced throughout participant experiences. Training was more significant for those who lack confidence with technology, whereas for technically minded the exposure to different technologies was key to sparking new ideas.</td>
</tr>
<tr>
<td>Individual lecturer career stage</td>
<td>Opre, Zaharie, &amp; Opre, 2008</td>
<td>A reluctance to invest time in new technologies was seen and partially attributed to being in the latter stages of a career stage and conversely the willingness to challenge the status quo, of how feedback was provided, was evident when new to teaching.</td>
</tr>
<tr>
<td>Pedagogic values</td>
<td>Kregor, Breslin, &amp; Fountain, 2012</td>
<td>Pedagogic values could be seen in the beliefs and choices of individuals. For example valuing the needs of individual learners was shown in the desire to cater for a range of student needs; the value of embracing widening participation was enacted through the meeting of specific needs through feedback choices; engaging with students about the technology used showed an appreciation of the student voice. Values are evident in approaches to practice.</td>
</tr>
<tr>
<td>Private theories</td>
<td>Churchill, 2006</td>
<td>Private theories were hugely important in shaping use, for example: A belief that the tutor’s action will make a difference to some students or a belief that feedback is a fundamental professional role provides conditions that make technology valuable.</td>
</tr>
</tbody>
</table>

The processes through which lecturers manage the complexity highlighted in Tables 7.1. and 7.2 are discussed in answer to the next research question.

What is the process through which technology enhanced feedback practice develops?

The processes that underpinned the formation were described in detail within chapter five in relation to Robson University. Combining the internal and external narratives of practice can further identify some of the processes that underpin practice; these can be described as social, mediating, deliberative and matching. Each is considered in turn.
Social processes
Social interactions influenced individual decisions to use technology for feedback, the type of technology selected and the way in which it was used. Social contact was also important in shaping attitudes to feedback per se – with new staff influenced by established colleagues, or established colleagues influenced by those who have been exposed to new ideas. The source of this social influence appeared to differ between institutions. At Robson University the informal organisational culture was most important – social networks, rumours from super-users of technology, and particularly networks formed through physical co-location were all powerful influences. Feedback from participants on the creation of narratives lead me to conclude that whilst informal practice is rich, it does risk being ad hoc and that some more coordinated efforts to make practice transparent would be valuable. In other institutions the social practice was largely traceable to the unit of the programme team.

Mediating processes
The influences on practice, described in answer to the first research question, affected individuals to differing degrees, and not all factors were present for each lecturer. The factors that influenced how an individual engaged with their context were underlying feedback orientation, technology orientation and their reflective mode. Particularly these three dimensions help explain the priority that was given to different factors in deliberation, for example:

- Where individuals lacked confidence to engage with technology, local social engagement provided compensatory support;
- The social aspect of practice was more dominant for those who would, in Archer’s terms, be considered to be communicative in their reflective approach;
- Student learning preferences were primarily the concern of those who had a global meta-reflexive mode;
- An aversion to audio appeared alongside a feedback orientation which emphasised the quality of the product;
The active search for efficiency appeared to be associated with goal driven, autonomous reflectors.

**Deliberation**
The development of practice is highly deliberative. The most frequent and significant concerns in the development of practice were about student enhancement, and time or efficiency. Shelton (2014) noted that time was the most significant factor in the evaluative deliberation of technology use but that time is considered with regard to contextual factors such as class size. Building on this point for technology in feedback, this research shows that time is considered not as an absolute concept but one that is reviewed relative to goals and aspirations, and contextual appropriateness. Time savings are ‘traded’ particularly with the possibility of student enhancement gains. Where efficiencies are made through technology adoption and the subsequent refinement of workflow, time may be reinvested into enhancement activities with no ‘bottom-line’ time saving to the lecturer. In light of this claim, Debuse, Lawley & Shibi’s (2008) suggestion that technology is employed for efficiencies in feedback is maintained, but the reality of achieving noticeable workload time savings may depend on the way in which any gains are preserved or reinvested.

**Matching**
Technologies were assessed and matched to purpose in one of four different ways, before being adopted:

- An issue to be addressed arose and technology was sought;
- Technology was encountered and stored in mind until an opportunity to use it materialised;
- Technology was encountered and was intuitively appealing: though no obvious need is served by its employment; opportunities to use it were actively sought;
- Technology was encountered in a way that does not relate to feedback, but was imported for use in feedback as it held potential to address an issue.

In light of this multi-layered negotiation of practice, current modes of
conceiving feedback through technology are not sufficiently addressing the complexity of the lecturer’s role and the decisions that they have to make.

These four processes depict some of the ways in which lecturers balanced the different considerations within the formation of practice. Although Archer (2003) describes a three stage reflective process and different reflexive modes used to negotiate courses of action and positions, in the context of feedback practice these specific processes were also identifiable. In this way the research has further unpacked the internal conversation of academic practice. These processes are offered in addition to Archer’s modes of reflexive practice.

How does engagement with technology for feedback influence the practitioner’s values, assumptions, practice and context?

Through a critical realist interpretation of literature, it was posited that using technology for feedback might have an impact on the practitioner and on context. The impact of engaging with technology widely yielded a perceived increase in feedback volume and legibility, student engagement and consistency. Lecturers also reported that when they used technology it sometimes caused them to consider their assumptions and practices related to feedback. For example, by using an electronic rubric lecturers are forced to articulate the features of student performance that would be associated with the highest marks; this represented a challenge to existing practice. Similarly, use of technology in feedback triggered reflective questions about how students experience their feedback. For example, engagement with new media prompted some to consider the qualities of their feedback product – particularly its balance and emotional dimensions.

As feedback conceptions were revised, the way that technology was used to fulfil those modified aims also evolved. This evolution of practice is shown diagrammatically in Figure 7.1. The diagram highlights the importance of reflective space to coining a change to practice. Several of the participants had a ‘reflective realisation’ within the actual interview, as this was the first opportunity they had to articulate their experience – for example in relation to
how students conceive the feedback product. Figure 7.1. also indicates that adaptations made as a result of realisations about feedback practice may not involve technology, for example, rubrics may be adopted in paper form if they are deemed beneficial to practice. Buchan (2011) suggested that reflection on technology use could trigger change to pedagogy and expectancies; evidence in the context of technology for feedback practice concurs.

**Figure 7.1. The evolution of feedback practice using technology**

- Initial motivation: feedback enhancement sought and/or professional values alignment underway
- Technology employed
- Reflection on practice
- Feedback reimagined
- New technology sought and/or adaptations to non-technology based feedback practices
Changes to context were not widely cited by participants as a result of their engagement with technology, but feedback through technology was associated with tension between colleagues. Some users of technology cited irritation at the additional workload, which they gained through their practice and commitment to quality. They showed frustration about the lack of technology employed by some colleagues, and despair about the quality of feedback offered by some colleagues; participants believed some colleagues to be ‘letting the side down’ with students. In literature technology was shown to be contentious amongst teaching staff, particularly leaving non-users feeling alienated and pressured (Anderson et al., 1998; Geoghegan, 1994). This sense was reflected in the accounts of the two individuals who did not use technology in feedback.

**Limitations of the study**

The study was limited in its coverage of individuals who do not use technology for feedback. In the course of the research it became clear that the inclusion of two such participants was essential for inclusiveness and to begin to address the tendency for technological optimism in studies relating to technology in education, as was recognised as necessary by Clapham (2012) and Mathisen (2012). The two cases are complete in their own right, but they do not claim to be representative of all of those who do not choose to give feedback via technology.

As the study emerged it became clear that a fuzzy conception of ‘technology’ was being used. What individuals considered as ‘using technology for feedback’ varied – for example if someone used a word-processed pro-forma but populated via pen and ink, would they be considered a technology user? This varied in each case. Some participants included ‘low-tech’ experiences and others believed that these were nothing special and therefore not worthy of mention. This fuzziness of definition affected choices about what participants themselves revealed. As the study was largely exploratory, participants were encouraged to share their experiences with all tools since what was hi-tech to one was low-tech to another. I made no attempt to control what experiences that people prioritised; the degree of self-selection within
the experiences revealed was part of the process of them revealing their self-
identity and their relationship with technology. I was aware of the reaction I
gave to different tools within the interview, as this could be a subtle influence
on the focus of the discussion. I tried to treat each tool with the degree of
priority inferred by the participant. One of the aims of the research was to
develop an understanding of the formation of practice; by including a wide
range of technologies a wider range of insights was gained, but as a
consequence some dilution of detail may have occurred.

Finally one of the limitations of other studies in relation to feedback and
technology, noted in chapter two, is the focus on espoused rather than actual
practice. This study made no attempt to corroborate practitioner narratives
with other actors or artefacts.

**Recommendations for practice**

Recommendations are listed for academic or educational developers and
then for institutions of higher education.

**Academic developers**

i. Academic developers should take time to understand what is
motivating the use of technology for feedback, what the feedback aims
of the individual are, and what the underlying feedback and technology
beliefs of the individual are. Armed with this knowledge advice can be
tailored to specific needs, values and beliefs. The different feedback
and technology orientations formed in this study may provide the basis
of an aide-memoire for a conversation to this end.

ii. Following on from i. within the context of continuing professional
development and initial teacher training, educational developers may
encourage individuals to explicitly articulate their own feedback and
technology orientations and to locate the origins of their outlooks. By
making this transparent, individuals can become more self-aware and
may come to appreciate the positions of others.
iii. Those supporting the use of technology for feedback should make time to encourage reflection before further revisions to practice are made. Reflection appears to be valuable in reframing and evaluating practice but the research showed it was not always undertaken.

iv. It is unwise for those advising on technology use in feedback to conflate the advantages of different tools, particularly because the failure to meet expectations can linger in institutional memory within social networks.

v. Developers should devise a menu of technologies with a clear depiction of the strengths and weaknesses of each to provide a useful prompt for discussions and a useful resource for those deliberating how they might use technology in feedback.

vi. The power of the social network in advancing practice was great and so wherever possible developers should form links between users of feedback technology. The developer should match people with people, as well as with tools, and to aid this process, developers should become familiar with where conversations about feedback technology are already happening.

vii. Developers should generate authentic case studies of practice and make individual stories transparent. This could specifically inform the formation of networks, it could draw attention to how quality dilemmas have been satisfactorily resolved, and it would illustrate the benefits and challenges of different tools as they are used in different ways within a specific context.

viii. Finally, developers need to take care not to exacerbate the fracture lines of practice. This does not mean laying aside personal values, or becoming purpose neutral, but it does mean being careful to recognise different viewpoints that emerge from different identities and history and it means taking care not to assume that non-engagement is generated by apathy.
Institutional recommendations

i. Higher education institutions are encouraged to embrace the full range of spaces and processes through which feedback practice, particularly using technology, is formed. Institutional policy advisors should take time to understand the culture on the ground and how this integrates with formalised plans. For example, at Robson University physical location was shown to play an important part in the social networks that develop informal practice, and these could be managed to ensure informal opportunities for exchange are maximised.

ii. To enable lecturers to: a) have their practice recognised as a core part of pedagogy; b) exploit the particular benefits of tools in a way that is coordinated from both a pedagogic perspective and a workflow perspective; and, c) strengthen meaningful networks for the development, discussion, sharing and refinement of practice, higher education institutions should encourage programme level thinking about feedback and plan accordingly. Where programmes are heavily centred on discrete modules, which operate with considerable independence, lecturers’ experiences were shown to encounter workflow impediments and lecturers had a weak, patchy, network of practice. It is proposed that as an additional benefit institutional planning, including purchasing and the anticipation of quality management issues arising, would be assisted if course level feedback maps were created to incorporate use of technology.

iii. To address the fuzziness around quality assurance, institutions should strive to provide clarity over what is and is not allowed within summative and formative feedback. Given the pace of change, and the range of tools being embraced this guidance may not be restricted to named tools but could refer to a set of principles for what is permissible. By example this may include recommendations about whether ‘cloud’ tools are allowed and whether institutional pro formas are universally required, or if instead they only serve to provide a model for what should be included within feedback.

iv. Institutions may offer timelines for any preparatory activity that is related to particular technologies to allow staff who use particular tools
infrequently to be reminded of the necessary pre-steps to ensure quality requirements will be met. Co-authoring this guidance with early users is recommended.

v. Institutions are encouraged to ensure that training in relation to technology use in feedback is offered in a number of ways including workshops or guidance events for those needing specific practical assistance, and events which offer more speculative exposure to new technologies. Events beyond the institution should be encouraged to help calibrate lecturer appreciation of the wider higher educational context, and specifically the expectations of students.

vi. Institutions should be clear about whether they aspire to a mixed economy of different feedback tools or a single system for electronic feedback. Institutions are encouraged to understand the relative merits and demerits of different tools for feedback, from both a staff and student perspective, before taking a decision. Coming to a clear position on this matter would give lecturers the confidence to invest in a patchwork landscape of tools or else engage with the prescribed system.

Recommendations for further research

i. This study has shown that critical realism can generate new insights in the context of feedback technology. Particularly the employment of this approach has generated understanding of the complexities of practice. Further studies of this type may enable us to better understand how staff, and potentially students, in higher education operate within and shape the assessment, feedback and technology environment.

ii. The research was limited to sixteen individual cases across five institutions; further research into lecturer experiences of choosing and using technology for feedback across a wider range of institutions would assist in refining the findings of this work, particularly with respect to the different feedback and technology orientations identified.

iii. Evidence from this study suggested that feedback and technology orientations are highly connected to personal history and academic identity. Only two cases on ‘non-users’ of technology were
encompassed; yet the insights generated through these were illuminating. Research that incorporates a greater range of identities and outlooks would offer a fuller picture of how technology and feedback attitudes are formed.

iv. While recommendations have been made for clarity in quality management procedures related to use of technology in feedback, research may also be extended to establish the specific implications of different quality requirements on the use of technology in feedback, or indeed the provision of feedback generally.

v. The extent to which lecturers focus on structure or content in feedback is negotiated is worthy of further consideration. Understanding this point has implications for how staff can be supported in their production of feedback.

vi. The research showed that some lecturers had emotional concerns in the production of feedback. Research into understanding the emotional process of giving feedback, through technology or more generally, would enable support to be better fashioned, and would permit more openness about the challenges of generating feedback.

vii. The informal spaces of practice formation were undoubtedly powerful. Only a partial view of the characteristics of informal practice has been developed. A dedicated study to reveal the social patterns that support and sustain feedback and technology practices would be useful to planners, and particularly space planners, within an organisation.
Word count: 57,098
References


Bourgault, A., Mundy, C., & Joshua, T. (2013). Comparison of audio vs. written feedback on clinical assignments of nursing students. *Nursing Education Perspectives, 34*(1), 43-46. doi:10.5480/1536-5026-34.1.43


doi:10.1080/02602931003632381


doi:10.1080/0969594X.2013.790308


Hunter, N., & Hill, J. (2011). *What is the range of feedback provided by staff at harper adams university college and to what extent does the feedback help students to feed forward and to improve their educational or learning skills?* Unpublished manuscript.


doi:10.1111/tct.12158


doi:10.1080/02602931003632340


Voelkel, S., & Mello, L. V. (2014). Audio feedback - better feedback?

*Bioscience Education Electronic Journal, 22*(1), 16.


**APPENDIX 1 INTERVIEW SCHEDULES**

**Interview schedule for home institution participants**

**Background and beliefs**
1. Can you briefly describe your teaching role and background?
2. What do you see as the role of feedback in your teaching?
3. How do you imagine your students use feedback?
4. What experience do you have of using technology in teaching?
5. How would you describe your attitude to and use of learning technology?
6. What technology are you using in the provision of student feedback? How is this being used?

**Use of technology for feedback**
1. Can you explain your journey with using technology for feedback? Particularly for each technology:
   a. What motivated and influenced your decision to use technology for feedback? What issues were you trying to address or overcome?
   b. What role did others play in your journey? (colleagues, e-learning support, students)
   c. Were there any barriers or challenges to using the technology in a feedback situation? Specifically: Quality assurance, others, time
   d. What challenges did you encounter as you progressed on your journey with technology and feedback, and how did you overcome these?
   e. As you engaged with technology for feedback what deliberations did you go through?

**Impact**
1. What were the benefits of the technology?
2. How do you perceive the impact of your engagement with technology for feedback
• On you and the way you work?
• On others (students or colleagues)?
• Anything else?
3. Has anything changed as a result of your engagement in this practice? For example teaching methods or assignment design.
4. Where next for your use of technology in feedback?
Interview schedule for lecturer’s who are not using technology in feedback

1. Can you briefly describe your teaching role and background?
2. What do you see as the role of feedback in your teaching?
3. How do you give feedback to students?
4. How do you imagine your students use feedback?
5. What do you understand student expectations of feedback to be?
6. What do you understand student expectations of technology use to be?
7. What challenges do you face when providing feedback?
8. What factors shape the feedback that you give?
   Prompts for the discussion:
   a. Efficiencies
   b. Colleagues
   c. QA
   d. Training
   e. Student views
9. How would you describe your approach to, and use of, learning technology in teaching? What experience do you have of using technology in teaching?
10. What barriers do you perceive in using technology for feedback?
11. What factors might influence your decision to use technology in feedback?
Interview schedule for external participants

Background and beliefs
1. Can you briefly summarise your current teaching role and professional biography? (e.g. prior industry roles, time in teaching, time in institution)
2. What do you see as the role of feedback in your teaching?
3. How do you imagine your students use feedback?
4. What experience do you have of using technology in teaching more generally?
5. How would you describe your attitude to learning technology?
6. What technology are you using in the provision of student feedback? How is this being used?
7. How is technology for feedback used and supported across your institution?

Use of technology for feedback
1. Can you explain your journey with using technology for feedback? Particularly for each technology:
   a) What motivated and influenced your decision to use technology for feedback? What issues were you trying to address or overcome through your use of technology?
   b) What role did others play in your journey? (colleagues, e-learning support, students)
   c) Were there any barriers or challenges to using the technology in a feedback situation?
   d) What challenges did you encounter as you progressed on your journey with technology and feedback, and how did you overcome these?
   e) As you engaged with technology for feedback what deliberations did you go through?

Impact
1. What were the benefits of the technology?
2. How do you perceive the impact of your engagement with technology for feedback
   - On you and the way you work?
   - On others (students or colleagues)?
   - Anything else?
3. Has anything changed as a result of your engagement in this practice?
   For example teaching methods or assignment design.
4. Where next for your use of technology in feedback?
APPENDIX 2 SUMMARY POINTS UNDERPINNING THE CONNECTING ANALYSIS (SNAPSHOTS OF FORMATIVE NOTES)

<table>
<thead>
<tr>
<th>Research on the power of feedback</th>
</tr>
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<tbody>
<tr>
<td>Accountability culture – need to be transparent in marks – internal culture</td>
</tr>
<tr>
<td>Exposure to CPD</td>
</tr>
<tr>
<td>Changing student expectations of feedback and technology (from practice seen elsewhere and personal experience)</td>
</tr>
<tr>
<td>Students as drivers of change (hearing what students want)</td>
</tr>
<tr>
<td>Sense of professionalization of HE staffing (PSF)</td>
</tr>
<tr>
<td>Diversification of the needs student population (disabilities, learning styles) – widening participation</td>
</tr>
<tr>
<td>Internal CPD a trigger to technology purposing process</td>
</tr>
<tr>
<td>Identified links not yet made by the institution: PSF, CPD framework</td>
</tr>
<tr>
<td>Concerned to always evaluate and improve practice per se</td>
</tr>
<tr>
<td>Not a techie (low tech image) but positive attitude to ‘have a go’</td>
</tr>
<tr>
<td>Prepared to seek limited support at the beginning, due to a belief in independent professionalism</td>
</tr>
<tr>
<td>Students like technology</td>
</tr>
<tr>
<td>Belief that tech is a solution and tech is not a driver</td>
</tr>
<tr>
<td>Technology can add emotional depth</td>
</tr>
<tr>
<td>Persistent to overcome hurdles with technology</td>
</tr>
<tr>
<td>Necessary to keep up with technology to meet student expectations</td>
</tr>
<tr>
<td>Personal engagement in feedback research foregrounds the power, complexity and importance of feedback.</td>
</tr>
<tr>
<td>Technology can aid transparency for monitoring and providing interventions</td>
</tr>
</tbody>
</table>
Time elapsed between tech introduction and tech purposing
Internal CPD to give insights to new technologies
Primary motivator from feedback practice e.g. legibility, emotion and personalization...
addressing learning styles and disabilities
Summer as a time to plan with thought
Fusion of technology possibilities with student-centred feedback belief or need
Student experience as constant dominant
Limited communication issues arising and search for solutions (technical or practical challenges) with named others
A process of assimilation: To consider new technologies by a process of tech introduction
through others, deliberation on fit with existent practice, storing of possibility (on the shelf in
the mind), possibility encountered, communication with others and pursue. This approach is
labeled a technology purposing process
Nature of feedback: central to technology suitability considerations (is it content focused or
generic feedback). Where feedback is content led and personalized technologies are
selected to enable this. Grademark has been rejected on the basis that no efficiency would
be gained.
Evaluation and discrimination of technologies according to student-centred need
Technology negotiation of how the technology can accommodate the assignment or meet the
perceived student need (student dominant negotiation)
Interplay of efficiency and enhancement – under constant review to locate practice gains
Wider evaluative thoughts about the wider situation or field of practice leading to
recommendations
Initial project formed through technology becoming visible through internal or external
professional engagement (CPD, ex. ex., training)
Networks of practice self help in the absence of formal solutions e.g. second marking cells
formed
Individual named presenters at staff development events significant in introducing new
technology (critical incident of introduction – the click)
Frustration with the non-engagers
Important to develop practice as core part of professionalism
Enhancing the student experience underlying implicit
Efficiency (speed) important but not the goal – Enhancement is the priority
More student focus in crafting comments/feedback – the provision of a reflective space
Changes to the balance of feedback comments (positive and negative)
Change to the quality of the advice given about what to produce as the markers themselves
externalize the requirements
APPENDIX 3 NARRATIVE PORTRAIT EXAMPLE: RUTH’S STORY

I’ve been teaching for over thirty years. I was trained in secondary school education, and on returning to teaching in 1993, I resumed my career in part-time lecturing in both FE and HE and became full time in 2000. My discipline background is ecology though I have taught biology and a whole range of topics related to environmental themes.

My interest in the students learning and progression was initiated with my role in redeveloping and managing a one year FE level 3 Access course from 1999 - 2007. It was clear that giving the students better direction and the skills to reflect and evaluate their strengths and weaknesses was critical to their success.

For me, feedback is critical. I think if we don't give feedback, we are failing as educators because you can't assure a student that you've marked the work fairly, that you've looked at it, you've analysed it and that you've critiqued it. You need to be quite clear where marks are but most importantly, give advice on how they can improve the work next time. Giving feedback is part of being a lecturer; it's not an add on to what happens in class, it's absolutely essential to help students improve. It needs to motivate, and be relevant. It needs to be personal and most importantly legible. Of course we can't make students use their feedback, but we can assist them to engage with it by providing high quality feedback.

Legibility is one of the main reasons I always type my feedback; after doing some research in to the student experience of feedback I found that within the institution legibility was a real problem. I use Word to type comments, which allows me to personalise comments. I sometimes use Word like GradeMark – with a bank of comments. I always use typed comments for dissertation feedback, in part because it helps keep a record to inform face-to-face discussions and follow-up. I also use audiovisual technology. I've tried one-to-
one feedback in this way, but not all of the students liked this. So I have moved from using it for individual feedback to using it for ‘one to many’ feedback; I also use it to provide advice and guidance on assignments to the group when they are developing their work.

There are technologies I’d still like to explore. I’m open to using GradeMark, I’ve had training, but the right opportunity hasn’t arisen yet. The problem was that I had a module where it didn’t really suit and I think you’ve got to be careful that you use the right technology for appropriate situations. I think GradeMark is best used when comments are likely to be repetitive. Because a lot of my assignments are highly individual, the feedback is always very different.

I think that you have to give feedback that works well with individual learning styles. That’s really important. We have a diverse range of students here, and many dyslexic students. The use of audio and visual technology for these students is quite powerful. Because students have different preferences, I’m going to offer them choice about how they get their feedback – through Jing, or by typed comments.

One of the main consequences for me of typing my feedback is being able to stand back and ask myself “Does this tell the students what I want it to tell them, is it constructive, is it clear, does it tell them where the marks are, does it tell them what their weak areas and if you want to get a better mark next time, this is what you need to do?” If not then I can change it. I can use the screen to craft my comments so they are beneficial to the students. I get a better balance of positive and negative comments. I think developing clarity in the feedback bank comments gives me clarity of thought about what I am asking students to do, in turn this helps me to guide them better in the development of assignments.

I am not a techie, but through my external examining, my own studies, staff development sessions, and through talking to others, I do see that technology has huge value. It's not until you see what's out there or you talk to
colleagues that you know what's available. I never heard of screen capture and I might never have come across it had I not just by chance gone to a conference. Sometimes I'll see a technology and have a go at making it work, but then I won't use it until I see what value it will add. You do need to commit time to making it work; but there is plenty of help available from others to make it happen.

Staff are not always prepared to put the time in to developing feedback or their use of technology. There is a big inequality and this is really frustrating, for the staff who do bother, and for the students. Until its mandatory we will have staff who invest time in this and staff that don't take this seriously. Student's expectations are changing and staff shouldn't be able to opt out. Institutional backing for online feedback could open up so much; it would allow learner support to target attention and students to view their feedback journey so that they can reflect on it and learn. For now though, this idea doesn't have the necessary commitment to make it happen.
APPENDIX 4 SCREEN SHOT OF MAXQDA SOFTWARE