

Improving the Student Learning Experience through Dialogic Feed-Forward Assessment

ABSTRACT

Assessment feedback from teachers gains consistently low satisfaction scores in national surveys of student satisfaction, with concern surrounding its timeliness, quality and effectiveness. Equally, there has been heightened interest in the responsibility of learners in engaging with feedback and how student assessment literacy might be increased. We present results from a five year longitudinal mixed methods enquiry, thematically analysing semi-structured interviews and focus groups with undergraduate students who have experienced dialogic feed-forward on a course in a British university. We use inferential statistics to compare performance pre- and post-assessment intervention. The assessment consisted of submitting a draft coursework essay, which was discussed and evaluated face-to-face with the course teacher before a self-reflective piece was written about the assessment process and a final essay was submitted for summative grading. We evidence that this process asserted a positive influence on the student learning experience in a number of inter-related cognitive and affective ways, impacting positively upon learning behaviour, supporting student achievement and raising student satisfaction with feedback. We advocate a cyclic and iterative approach to dialogic feed-forward, which facilitates learners' longitudinal development. Programme teams should offer systematic opportunities across curricula for students to understand the rationale for and develop feedback literacy.

KEYWORDS

Dialogic feed-forward; self-regulative behaviours; proactive recipience; assessment and feedback literacy

Introduction

Assessment feedback should be an integral part of the learning process, helping students to understand their current performance and how to close the 'performance gap', increasing belief that they have control over their success, and maintaining motivation for their studies (Hattie and Timperley 2007; Carless et al. 2011). In reality, however, there is a recognised gap between teacher perceptions of feedback and the student experience (Carless 2006; Orsmond and Merry 2011; Mulliner and Tucker 2017), leading some to question the value of feedback in the assessment process (Price et al. 2010; Carless et al. 2011).

Students can find feedback problematic for a host of reasons, preventing them from acting on the advice given (Winstone et al. 2017a, 2017b) and leading to little if any improvement in their subsequent work (Sadler 2010). Common difficulties identified in the literature include written feedback being badly timed (Carless 2006), feedback not being sufficiently individualised to be useful (Jonsson 2013), or being too

over-whelming (Orsmond et al. 2005), and students being unable to decode and interpret feedback as the message lacks clarity or they cannot understand the terminology (Weaver 2006; Price et al. 2010). Additionally, feedback might not be actioned as the work is not picked up, the students do not understand the relevance or applicability of the teacher's comments (Duncan 2007; Price et al. 2010), they are not emotionally prepared to process the feedback (Handley et al. 2011; Ryan and Henderson 2018), or they do not trust the credibility of the teacher (Poulos and Mahony 2008; Boud and Molloy 2013). Finally, students may lack strategies for using feedback (Jonsson 2013; Carless and Boud 2018). Winstone et al. (2017a) recently categorised the barriers to student use of feedback based on underlying psychological processes. Their succinct framework, emphasizing the fundamental responsibility of students in their learning, consists of four themes: *awareness* of the meaning and purpose of feedback, *cognisance* of strategies by which the feedback can be implemented, *agency* to implement strategies, and *volition* to scrutinise feedback and implement strategies.

Perhaps because of these numerous difficulties, assessment and feedback receive consistently low satisfaction scores in national student surveys of higher education around the world, irrespective of institution or discipline (O'Donovan et al. 2016; Mulliner and Tucker 2017; Shafi et al. 2018). To improve student performance and to raise the metrics that feed national league tables, there has been increasing research into the pedagogy of assessment feedback (Li and De Luca 2014; Winstone et al. 2017b).

Dialogic feed-forward

The research presented here is based on two foundational premises that should overcome many of the theoretical difficulties relating to feedback. The first premise is that feedback should occupy a central position within a dialogic approach to learning and teaching (Nicol 2010; Price et al. 2011; Blair and McGinty 2013; Yang and Carless 2013; Ajjawi and Boud 2017, 2018). Dialogic feedback is the creation of meaning and understanding via discourse between lecturer and student, or student to student (Wegerif 2006). Whilst teacher-student dialogue has been cited as a key aspect of effective feedback (Beaumont et al. 2011), Nicol (2010, 503) notes that 'Mass higher education is squeezing out dialogue with the result that written feedback, which is essentially a monologue, is now having to carry much of the burden of teacher-student interaction'. As such, written feedback should ideally be received in a context where teacher and students can discuss the feedback (face-to-face or via electronic verbal or written discourse) and students are prompted to reflect on what it means for the continued development of the work. The aim of feedback discussion is to diagnose areas for improvement (enhancing task compliance) and to scaffold students to achieve higher grades (enhancing task quality). Interpretations are shared, meanings are negotiated, and confusions and expectations are clarified, making the tacit explicit (Carless 2013). Dialogic feedback thereby forms part of a social constructivist approach to assessment, where feedback

moves beyond passive information transmission or 'telling' to become a participatory process, forming part of an ongoing relationship between teacher and student (Rust et al. 2005). Engaging learners in feedback dialogue also affords them the opportunity to interact with notions of disciplinary quality and standards (Steen-Utheim and Wittek 2017).

The second premise for our research is that feedback should be future-oriented (Carless 2007; Duncan 2007; Sadler 2010; Orsmond et al. 2013; Carless and Boud 2018). Students frequently report frustration about the transferability of feedback to future work and this can lead to disengagement (Handley et al. 2011). This sense of disempowerment is enhanced by the modular structure of many degree programmes, where individual assignments are perceived as unrelated and are often marked by different teachers who might display divergent preferences with respect to marking criteria (Price et al. 2011; Winstone et al. 2017a). Feed-forward focuses on providing students with prior exposure to and practice with assessment in order to develop a clear sense of expectations and standards, which they can apply to future work (Carless 2007; Boud and Molloy 2013). Feed-forward refers to feedback given by teachers that either impacts upon an upcoming assignment, or is given post-assignment with specific direction on how it can be applied to future assignments. Vardi (2013), for example, reports on the use of individualised written feedback from lecturers concerning conceptual understanding and depth of knowledge, which significantly improved the performance of first-year business students in a large Australian University from one assessment to the next. Similar learning enhancements have been found with respect to the integration of feed-forward within undergraduate courses, including online and distributed learning environments (Baker and Zuvela 2013), and across courses using collective feedback histories to create individual learning plans for forthcoming assignments (Duncan 2007). Beaumont et al. (2011) represent the feedback process as a dialogic cycle wherein teacher and student have multiple opportunities to engage. In their model, receiving feedback is not seen as a single event but as a process that begins with teacher-student dialogue when a task is set, through guidance as the task is undertaken, to performance feedback accompanied by a verbal discussion informing the process of action-planning.

It can be concluded that if students are to learn effectively from feedback, they must be supported by academic staff to develop a mindset of proactive recipience (Winstone et al. 2017a), participating actively in the feedback process and subsequently acting upon the feedback they receive. Approaches to feedback should thereby develop self-efficacy; a person's beliefs about their capabilities to accomplish specific tasks (Ritchie 2016), and skills of self-regulation; a person's ability to plan, monitor and evaluate their progress and to adopt strategic approaches to learning (Nicol and Macfarlane-Dick 2006).

Research aims

Drawing from the wide body of literature, we implemented an assessment approach to optimally support students' use of feedback and we critically evaluated their consequent perspectives, learning behaviour and academic achievement. We aimed specifically to:

1. Explore student perceptions of the dialogic feed-forward approach and whether it asserted a positive influence on their learning experience;
2. Identify if and how the assessment behaviour of students was altered by the assessment approach;
3. Identify the extent to which students believed their self-efficacy and self-regulation skills were improved;
4. Examine whether the assessment approach enhanced student performance and raised their satisfaction with feedback.

Approach to course assessment

We adopted a dialogic assessment approach similar to Beaumont et al. (2011), offering preparatory guidance, in-task guidance, and task-specific and open boundaries feed-forward. We implemented our approach in a second year undergraduate optional course entitled 'Ecology'. The course comprises part of an applied physical geography degree delivered at a British university. The students choose an essay to research from a selection included in the course guide, which is made available in the first class. During this class, the nature of the assessment is discussed with students. Essay assessments are not necessarily associated with dialogue between academic staff and students but, for our course, students write a considered draft of their selected essay, which is discussed in an individual face-to-face meeting with the teacher. Towards the end of the course students take part in a seminar in which they discuss and grade two coursework essays from previous cohorts using the assessment criteria, comparing their judgements with those of the teacher (Rust et al. 2005). This exercise familiarises students with benchmarking against the grading scheme and illustrates how final products demonstrate learning outcomes and standards (Orsmond et al. 2002; Handley and Williams 2011). In terms of summative assessment, students write a self-reflection of their essay progress (with a proportion of marks awarded for their verbal critique during the face-to-face meeting) and self-assess their essay draft (25% of the course mark). This element prompts a generative overview of essay development and calls for students to judge their near complete draft with reference to the assessment criteria and grading scheme (Nicol and Macfarlane-Dick 2006). A week later, students submit their revised essays (75% of the course mark).

Each feed-forward meeting began with an explanation that it would be a period of mutual critique, leading to a plan for the further development of the draft essay. Consequently, the teacher began with the question 'Are you ready for feedback'? Discussions were initiated with open questions asking the

students to explain their overall approach, summarise the strengths and weaknesses of their draft, and to offer a provisional grade. The teacher and student discussed how to discern key aspects of the question, and how to apply appropriate knowledge and skills to develop an effective answer building on the strengths of the draft. The aim was for students to ask questions and seek clarification in order to understand, develop a strategy for and act on the extensive written feedback. The emphasis was squarely on process rather than grade (Price et al. 2011), supporting the development of task-specific and generic assessment skills.

Where key weaknesses were identified in meetings, exemplar paragraphs of previous student work were used to demonstrate good practice and make explicit the teacher's judgement and its rationale (Carless and Chan 2017; To and Liu 2018). Students took these exemplars away to consider them more fully in their draft development. The meetings were audio-recorded (with permission) for students to listen to at their leisure.

Research methods

We adopted a two-phased case study approach to address our aims, employing both qualitative and quantitative data collection. In phase one, our primary qualitative instrument was individual semi-structured interviews undertaken voluntarily across two consecutive student cohorts on completion of the course (academic years 2015-2017). In total, 44 interviews, averaging half an hour in duration, were conducted by a research assistant who had not taught on the course (a response rate of 61%). In terms of sample demographics, the majority of respondents were full-time domestic students, aged 18-21 years, with a roughly equal split according to gender (45% males and 55% females). This sample was representative of the course population. The interview schedule was comprised of 20 questions that prompted students to evaluate: the assessment and feedback approach; what they had learnt from the feedback process; how the feedback made them feel and what they did to act on it; whether the feedback helped them gain a high course grade; whether they rated the course as giving them high quality feedback; whether they were more keen to receive and act on feedback in future; whether the feedback would change their way of working as a student; whether they felt more confident tackling essays in future; and whether they believed they could monitor their learning better in future. The project passed through the ethical review process of the authors' faculty and, in accordance with standard procedures, the students volunteered to take part, offering informed consent. They were aware that they could withdraw from the project at any time, or withdraw their data from the study at a later date, with no consequence and they were assured their comments would be reported anonymously.

The digitally recorded interviews were transcribed verbatim and analysed thematically through an interpretivist lens (Braun and Clarke 2013). We adopted a largely grounded approach, searching for commonly occurring themes inductively across the transcripts (Denzin and Lincoln 2018). Transcripts were first read in depth by both authors to allow familiarisation with the data. Initial codes were noted and gathered into themes. Themes were then reviewed against the entire dataset iteratively, refining them for internal coherence and mutual exclusivity until a final set of themes emerged. The two authors met regularly to review, negotiate and ensure consistency between the interpretations and the data. Finally, the themes were explored in NVivo in more detail, developing sub-themes where appropriate. At this time, we allowed further deductive coding, based on concepts drawn from the literature. In the results, we use quotes from participants to illustrate views that typify common themes, organising them under our four research aims.

In phase two, we employed inferential statistics to compare final essay grades for two cohorts before and after delivery of the new assessment approach (comparing academic years 2011-2013 with 2015-2017). We tracked these cohorts into their third year of study and compared their third year grades against those students who had not undertaken the Ecology course (academic years 2016-2017 and 2017-2018). We undertook t-tests in SPSS after ascertaining the normality of grade distributions using a one-sample chi-squared test. Overall, we use five years of quantitative data to test for differential performance both within task and longitudinally. We recognise that significantly improved grades cannot testify to the relevance of the new assessment and feedback approach alone due to confounding contextual factors. The most notable of these is whether the students taking this course are in general the most able academic performers, likely to gain higher grades without the assessment intervention. Nevertheless, significantly improved grades do indicate a positive change in the quality of course outcomes.

In phase two we also undertook two semi-structured group interviews with students at the end of their third year (one each in academic years 2016-2017 and 2017-2018). These group interviews, subject to the same ethical procedures as for phase one, captured the voices of seven students who had undertaken the Ecology course in their second year in order to elucidate their self-avowed final year assessment behaviours, and skills of self-efficacy and self-regulation. The interviews consisted of 10 questions that followed up on the previous year, notably: whether students believed the course assessment had changed the way they worked in their final year, including if and how they sought feedback; whether they had felt more confident in tackling essays in the final year, whether they felt the course helped them to gain better grades in the final year; and whether they could monitor their learning better after the Ecology course. These interviews allowed examination of how dialogic feed-forward was used by students over the longer-term.

Results

The student learning experience

In the feed-forward meetings the students engaged with learning 'head on'. These were affective encounters in which their work was being judged, and this required emotional capacity to receive, process and build upon. There was a clear evolution in emotions over the feed-forward process. Students initially felt nervous and apprehensive to receive commentary on their drafts. Some talked about feeling scared due to fear of criticism/failure and there were expressions of disappointment, upset, annoyance and even shame on receiving the feed-forward:

'I was worried when I handed in my draft, because I knew it wasn't brilliant' R29

'It's quite disheartening when you're like I tried so hard on this and there is still so much more I can do'

R25

'I'm definitely one of those students that avoids feedback because of fear of criticism. So, having that face-to-face meeting forces you to confront that' R11

As their encounter with feed-forward progressed, however, students reported more positive emotions of enjoyment, satisfaction and motivation as they recognised the utility of the teacher's feedback in guiding them to improve their work:

'The bit in between my draft and writing the final piece was the best bit because I knew what I was doing and I enjoyed that process of making it better' R7

'Having that chance to see you've done something that's not quite right, this is how to go about doing it better, yeh that was definitely good ... any feedback can only be a positive thing' R16

'I found it very useful ... I was more motivated because I knew what I needed to do' R37

For some students the meetings were cathartic, reducing their anxiety as they 'came clean' with their level of progress, revealing their stumbling blocks and sharing what they did not understand. The meetings galvanized these students into action as they established or regained in-task self-efficacy:

'That was the main thing, it wasn't the final mark; you're done there's the feedback. I knew I could go away and change it' R31

Recognising students' emotional vulnerability and sense of insecurity, the meetings were designed to interweave constructive academic commentary with discussion about what the students might do post-meeting to attend to the comments and how this might make them feel and act differently as a learner. The key was to persuade the students they had capabilities that could be developed over time rather than fixed abilities that might limit their achievements. The disheartened student above, for example, commented later in the interview about feed-forward:

'But it does make you work harder at the end of the day, because you know what to improve and how'

R25

Despite the clearly affective nature of the assessment process, nearly all the students said it was enjoyable. They cited a good selection of essay topics that were accessible from the outset, and which were linked to lectures thereby promoting engagement. They enjoyed improving their work in-task using the feed-forward, and they rated the dialogic process as helpful for future assessments. The few students who did not enjoy the assessment said they struggled to write their first draft and did not allow themselves enough time to develop their second draft. They admitted to bringing time pressure and stress upon themselves.

When asked what was good about the assessment, the overwhelming response related to the feed-forward meeting. Students valued highly the opportunity to discuss their essay draft face-to-face with the teacher. The majority of respondents referred to geographical metaphors such as knowing where they were with their work, establishing if they were on the 'right path/track' and not 'going off course'. Through reciprocal interaction, they felt enabled to seek clarification and gain greater understanding of the meaning of written feedback:

'When I've had drafts handed back to me written over, I don't understand what they're trying to say.

I can ask you questions if we're talking to each other about it, it's easier to see things' R7

'I've had it before where you get electronic feedback and you might not be sure what some of the comments mean ... being able to discuss it is important. You get that progress and can discuss how you can change it as opposed to just saying this is wrong' R9

Students also rated the feedback meetings positively because the one-to-one relational discussion made them feel personally valued:

'It was about me and my development' R2

'I definitely felt like you cared about what I was getting' R7

By contrast, the students struggled to identify anything bad about the assessment. The only issue that was raised by a handful of students was the time differential between their chosen essay topics and when lectures were delivered. Although the students acknowledged that all lectures were useful to all essay questions, they did tend to link specific sessions with particular titles and believed that if their essay topic came at the end of term this was more of a challenge for them than for those students who selected a topic that was covered at the start of term. The importance to students of information transmission is evident here, although it is mentioned with much less frequency than the positive effects of dialogic feed-forward.

All respondents except one believed the feedback helped them to achieve a high grade on the course and the reasons for this are detailed below, relating to altered task-specific behaviour, self-efficacy and self-regulation. The single student in disagreement remarked that, although she learnt a lot about essay-writing and felt more confident to tackle essays in future, she nevertheless struggled with this first attempt and did not gain a mark congruent with her desired benchmark.

Assessment behaviour of students

With reference to task-specific behaviour, the feed-forward meeting prompted students to spend more time on the assessment. It acted as a point of contact, pulling their thinking and action earlier into the term:

'You don't just have the hand-in at the end of the semester. You have something a bit earlier to make you get more work done, which I find really good because it's more of a motivation and driver to get work done early' R6

'I wanted to make sure that I completed the draft to my best ability to get useful feedback. When I knew what I needed to do for the assessment, I then spent more time on it ... I would have definitely spent less time on the essay if I didn't get the feedback' R32

The students admitted to 'spreading out' their work over the term, developing it more 'slowly' compared with other courses. When questioned, they did not consider the extra work put into the assessment detracted from their effort on other courses.

Entering into dialogue with the teacher stimulated the students' active involvement in the feed-forward process, compelling them to engage critically with their work. It was clear from the interview responses that students had both the volition to scrutinise their feedback and were cognisant of actions to repair weaknesses and close the performance gap:

'I really understood what I needed to do from the feedback. Because sometimes you get feedback and it's just like a sentence. And you think, well I'm not sure I really understand what I need to change' R29

'It taught me not to be so descriptive and to be more critical, which is what pushes you into the higher marks. If I didn't have that meeting, it wouldn't have crossed my mind' R16

'It helped me to understand how much time I need to put into a given article ... to really understand it and then move onto the critical side of things' R30

The use of exemplars was reported as useful, providing concrete representations of task requirements:

'The exemplar paragraph really helped me understand how I needed to structure. It definitely helped me a lot to actually visualise what it should look like' R31

'It helped me understand your expectations a bit more and what sort of level I should be aiming for' R9

Gaining feed-forward in-task thereby allowed the students to discover if they were tackling the essay appropriately. This motivated them because they had a clearer idea of task and tutor expectations, where they were in their learning, and where they were going.

After discussing an action plan with the teacher in the meeting, without fail students undertook further study and assignment revision. They worked through the feed-forward adopting strategies that were logical to them:

'I looked at the written feedback you had given first. I altered that as much as I could and then I listened to the recording once I had done a second draft. Then I put in the points you said during the recording'

R28

'I went back and listened to it again and started with the most important things ... and then I went through paragraph by paragraph ... I sorted out the structure and then I went into the paragraphs and sorted out the content' R31

The feed-forward meetings prompted students to take greater ownership of their work, to move beyond mere hoping to do well towards taking positive action to achieve a higher grade:

'I would have just carried on with the essay and then would have been like hopefully it will be ok. The meeting enabled me to understand the way forward and act on it ... without it I don't think I would have actually passed' R13

'If I got the feedback with the mark I would look into it, but I wouldn't actually take action. I feel like that is how you learn, by looking at feedback and taking action' R32

Essentially, the students viewed feedback as disempowering because it comes after the fact in high stakes assessment, but they viewed feed-forward as empowering as it is developmental:

'There's no point in receiving feedback after hand-in because you're not going to benefit' R14

'I knew I had the power in my hands to improve and act ... and by acting on the feedback it put in my head what I need to do to achieve in assessments of this nature in the future' R32

Beyond the specific task, students self-avowed to assessment-related behavioural change across their second year courses:

'After doing the Ecology essay I did write a draft for coasts and sent it to the lecturer' R14

'It's altered the way I approach other modules. Like essay plans for exams ... when I was doing practice questions for topics on the deserts exam, I did a plan for each of those. And then when I was doing my plan, I said ok that needs more, that needs a reference there, because I had already done it for the Ecology essay' R28

Overall, the students attested to being more proactive with their assessments in the second year. They commented most about starting coursework earlier, preparing a draft in stages rather than in one sitting and seeking teacher feedback to remedy weaknesses. One student specifically remarked that he had come to recognise that 'first class work is not a first draft – sadly it's like the twentieth draft'. Students

also mentioned supplementing teacher feedback with self-assessment against marking criteria. They were able to identify specific areas for improvement, notably written style (structure, clarity, depth and argument), critical thinking and searching effectively for literature.

The students expected to carry their revised behaviour into the third (and final) year of study and the semi-structured group interviews, undertaken at the close of this final year, captured for a proportion of students whether this was the case. Key themes reiterated in these interviews were carrying forward a better understanding of the assessment process, improved time management due to understanding that 'time really correlates with the grade that you get', producing a good draft to reflect upon, and soliciting relevant feedback via selective questioning:

'I definitely had a deeper understanding of the assessment process - not only planning for and writing an essay but being able to self-critique and understand my flaws'

'I have made sure that whenever possible I meet with academics and gather their opinions on my work. This is something which prior to the Ecology module would scare me as I was embarrassed by the mistakes within my work. Overall, I now see the importance of getting feedback on any piece of work which I produce'

Student self-efficacy and self-regulation

Almost all students in the second year interviews self-avowed to increased self-efficacy, believing more strongly in their capabilities to accomplish not just the course assessment, but future assignments:

'I wasn't confident on what I was doing before the meeting. Your help made a lot clearer what I had to do and how to achieve it. And then, once I knew what to do, it improved my confidence to go out and do the work' R24

'I definitely feel more confident ... being able to prepare, structure and write in the future. Not only will I be able to repeat these steps ... but I will also be able to identify mistakes or weak areas that I may not necessarily have done before' R33

The students also attested to an increased ability to understand and evaluate their learning after completing the course assessment:

'It helped me realise how to critique my own essays because I was able to go through the essay with you and know exactly why you were commenting on something ... It allows me to see in other essays the same things I'm doing' R10

'I worked through from mid 50s up to a first class pass. I can see how I have managed to get that for the first time' R15

'Now, I feel I can evaluate at different stages throughout assessment and therefore make changes. Before, I just skimmed over work, handed it in and got feedback at the end without really thinking about it' R29

In the second year, all but one student said they were more keen to receive and act on feedback after the course assessment. A small majority believed the assessment increased their ability to monitor and evaluate their learning. The remaining students said they were unsure of their abilities or were still developing these skills. By the end of the third year, all students had maintained their enthusiasm to act on feedback and all believed they had monitored and evaluated their learning better after the Ecology course.

Student performance and satisfaction with feedback

Within the cohort student grades improved from draft to final submission, but this can partly be explained by drafts being submitted at early stages of readiness. As only broad classification descriptors were communicated to students, we do not offer statistical analysis of within-course grade improvement. However, comparing grades pre- and post-assessment intervention, it is clear that student performance improved significantly after the intervention. The mean course mark from 2011-2013 (pre-intervention) (n=69 students) compared with 2015-2017 (post-intervention) (n=72 students) increased significantly by 7% from 56% to 63% ($p < 0.0001$). Students wrote less descriptively and built stronger arguments, offering more critical depth based on evidence from literature. The average mark for the Ecology course was also 3% higher than other second year optional courses ($p = 0.01$), a differential potentially depressed by students attesting to transferring good practice from the course to final assessments across their second year portfolio.

In the third year focus groups, all students reported that the Ecology assessment had helped them to gain higher grades in their third year courses. This is partly substantiated as, in the final year, students who took the Ecology course performed, on average, 2.5% better than those who did not (2016-2018). Falling just short of a statistically significant increase, the results nevertheless highlight that the self-avowed

changes in student self-efficacy and self-regulative learning behaviours had a positive impact on their achievement.

All students rated the course as giving them high quality feedback, with a quarter commenting unprompted that this was the best feedback they had received in their time at university. The five most common themes identified quality feedback as: extensive and detailed; timely and hence relevant to act upon to improve work; conversational allowing for questions and answers; directive; and personalised to individuals and their work, making it far more meaningful than generic cohort feedback (Table 1). Themes of lower importance were that feedback was: multi-faceted (with spoken, written and recorded feed-forward, exemplar paragraphs, and self-reflection all cited); that it compelled students to engage with their learning by preparing for the meeting and thinking about their work; it motivated them; and secured them a higher mark.

Discussion

For feedback to enhance learning it has to be understood and acted upon by students (Price et al. 2010). The assessment approach we implemented worked to overcome the barriers that prevent students from using feedback effectively (Winstone et al. 2017a), building their awareness of what feedback means, developing their understanding of appropriate implementation strategies, and increasing their sense of agency to implement these strategies (Winstone et al. 2017b). Students were given the opportunity to amend their work using individualised, task-specific commentary, related to criteria and standards and clarified through dialogue. This aligned the process of essay production with writing as it occurs in professional practice, shaped by review and revision, and developing in students skills that can be useful in an academic career.

Students welcomed the responsibility of dialogically engaging with feedback (Price et al. 2011). They stressed the importance of meeting face-to-face with the teacher in preference to receiving written comments, which rule out the ability to question and resolve uncertainties (Duncan 2007). Students perceived the feedback as highly useable as they could apply their understanding with immediate effect, rewriting and resubmitting their work (Price et al. 2010; O'Donovan et al. 2016). They reported an improved ability to decode feedback through questioning, consequent teacher explanation, and verification of their revised understanding, jointly appraising the work with the teacher and identifying actions for improvement (Sadler 2010; Winstone et al. 2017a). This process allowed students to interpret and understand better the teacher's intentions, keeping them on track with the task (Orsmond and Merry 2011; Blair and McGinty 2013). Students commented that the face-to-face dialogue engaged them actively in the feedback process, empowering them in their learning, and they subsequently enjoyed the

process of improving their work (Mulliner and Tucker 2017). The exemplar paragraphs from previous student essays proved useful in demonstrating the standards they were striving to achieve (Orsmond et al. 2002; Handley and Williams 2011).

In addition to the cognitive dimension of the feed-forward, there was an affective dimension affecting how students received tutor commentary (Yang and Carless 2013; Pitt and Norton 2017). This was partly positive and cathartic, offering an emotional release for students to admit their progress (or lack of) and to move forward from a mutually recognised benchmark. But negative emotions also surfaced for some students as the critique highlighted the extent of their weaknesses, threatening their self-esteem and self-confidence (Forsythe and Johnson 2017; Ryan and Henderson 2018). To overcome this emotional threat, and maintain academic buoyancy (Shafi et al. 2018), the teacher created a safe and nurturing learning environment. She empathised with students throughout the feed-forward dialogue, acknowledging their emotional responses and offering encouragement (Ajjawi and Boud 2018). She reminded them that being responsive to critical comments is a key attribute of effective learners and that, consequently, this was a positive moment in their learning. This open acknowledgement of 'unfinishedness' (Freire 1998) in both the students and their work seemed to nurture a growth mindset in the students as they went on to act on the teacher commentary and remediate their work post-meeting.

Students rated the feed-forward positively as it was personalised (Mulliner and Tucker 2017; Dawson et al. 2019). The teacher-student dialogue pertained to the strengths and weaknesses of individual pieces of work and how each student might develop their academic skills, sensitive to emotions in play (Ryan and Henderson 2018). This was particularly important for those students who failed to meet their expectations with the draft and who needed to be shown respect and encouragement to build both their willingness and self-efficacy to use the comments to improve future work. Students believed the teacher cared about them and the outcomes of their study, and this was a key reason they rated the feedback as effective (Blair and McGinty 2013). Thus, both the nature of the learner and their evaluation of the relationship between themselves and the teacher, the educational alliance (Telio et al. 2015), are important influences on student perceptions of feedback quality.

Whilst the teacher-student dialogic meetings clearly helped students to understand task-specific performance gaps and to revise their work accordingly, they were also able to apply their learning to analogous tasks and to develop their assessment literacy over the learning journey (Price et al. 2010). The meetings included explicit discussion of what the students were going to do to act on the feedback. This brought self-regulation strategies to the surface, not just in relation to the task in hand but

recursively in relation to other second year courses, and into the third year of study (Carless et al. 2011; Ajjawi and Boud 2018). In essence, students closed the 'feedback loop' by using performance information from one task to positively alter behaviour on a future task (Boud 2015; Shafi et al. 2018). As such, we advocate a cyclic and iterative approach to dialogic feed-forward, which facilitates learners' longitudinal development (Beaumont et al. 2011; Carless et al. 2011; Price et al. 2011; Boud and Molloy 2013; Carless 2018) (Figure 1). This approach is initiated within a single assignment and is purposefully linked forward into future assignments. We recommend this cyclic process is carried out in conjunction with self-assessment of performance against explicit criteria and grading schemes (Rust et al. 2005). Establishing within and beyond single assessment cycles a structured series of proximal goals allows students to measure their success in learning. This establishes elements of an ideal learning environment where students consciously take responsibility for the processes of monitoring, reflecting on and working to achieve their potential. Having assignments with embedded formative feed-forward allows longer-term motivation to be sustained and perpetuated. With a series of small goals and attainments, students will be more likely to develop sustained self-efficacy beliefs (Ritchie 2016).

Students believed that the feed-forward improved their grades in-task, and course results supported this (Dube et al. 2012; Vardi 2013). The quality of work improved from the drafts to the final summative essays and marks improved significantly when comparing cohorts pre- and post-assessment intervention. In the final year, students who had taken the Ecology course also performed better than those who had not. All students expressed high satisfaction with the quality of feedback (Vardi 2013).

Recommendations for practice

We believe that dialogue occupies an important place within a reflective and future-oriented assessment pedagogy. The cumulative process of drafting, self-assessing and refining work, following a dialogic feed-forward approach, provides opportunities for behavioural change and advancement of self-regulated learning. Throughout the process students gain mastery experiences, taking on and completing phased tasks, and receiving verbal feedback and encouragement to improve their capabilities. The key for academic staff is to deliver meaningful mastery experiences within courses that strengthen students' self-belief, leaving them confident and well-prepared for summative assessment. Building this confidence, however, can come from taking students into challenging borderland spaces of learning (Hill et al. 2016). In such spaces, students' traditional roles are disrupted as they move from passive recipients of information to active negotiators and evaluators. This liminal position can be emotionally challenging (Hill et al. 2019), but it also brings authenticity to the teacher-student relationship as academic literacies and standards are jointly explored.

Although the academic labour invested in teacher-student feedforward is not as great as it might first appear as it is shifted from later to earlier in the assessment cycle, we recognize that it is nevertheless a resource-intensive scenario. We have run this course with one tutor and 30-45 students and this has resulted in an intensive but manageable feedforward period for the tutor. A staff-student ratio of 1:25 or 1:30 is preferable. In order to achieve this, the approach might best be placed in a first year course when students arguably need the greatest direction (Beaumont et al., 2016), and where there might be less emphasis on articulation of content and more on skills development, privileging time for individual discussion with students across a team of teachers. Embedding feed-forward dialogue early in the curriculum would enable spiral forms of learning from the outset (Carless 2018). As the process moves to later years, peer feedback amongst groups of students (Orsmond et al. 2002) could be increased vis-a-vis student-teacher interaction. It must be remembered, however, that students can be resistant to advising peers or being evaluated by them (Liu and Carless 2006), so this needs careful introduction and support. In year two, teachers might meet students individually to answer specific questions about their work, following peer-to-peer discussion. By year three, peer-to-peer mentoring can be supported by optional group or individual meetings with the teacher. To achieve such progression, programme teams should offer systematic opportunities across the curriculum for students to both understand the rationale for and develop feedback literacy (Carless and Boud 2018): the skills of judging the quality of work during its production, managing affect, and reflecting upon and implementing feedback (Boud and Molloy 2013; Orsmond et al. 2013; Carless 2018). In this way, support can be shifted from teacher to students as their skills of self-regulation improve, achieving workload economies over the long term.

We recognise that adopting a student-centred, constructivist approach to feedforward may not be easy for some teachers. Offering practical advice to support teachers, we suggest relating to students in ways that are welcoming and attuned to them as individuals. Institutional Educational Developers may offer training in these types of assessment and feedback practices, supporting programme teams to work positively and coherently with feedforward discourse. We might not look to change our practice entirely, but to embed innovation as and where it is appropriate and to develop progressive interventions across programmes, supported by staff development and sharing of good practice.

There is a power relationship inherent in teacher-student feedback dialogue, where the teacher offers critique from the position of 'expert' (Carless 2006). Requiring participatory feedback meetings, however, can encourage students to access discussions, appropriate understanding and ideas, and refine their work more explicitly. Running an undergraduate first year course that makes this assessment approach compulsory (as noted above) would offer early support for all students, not just high achievers who tend to opt for additional support (Duncan 2007). Early involvement in such meetings would help students to

appreciate the value they can bring to feedback discussion and potentially improve their self-efficacy. It has been suggested, however, that formative feed-forward can harm the self-efficacy of academically weaker learners, discouraging them from participating in such interventions or actioning feedback thereafter (Wingate 2010). Teacher-student dialogue needs to be managed carefully to challenge students to reflect and improve independently, whilst encouraging them to build upon the foundations of their drafts. An appropriate balance between support and critique can be difficult to achieve in view of the different preferences and reactions of individual learners (Yang and Carless 2013; Ryan and Henderson 2018).

Effective dialogic feed-forward moves academic staff beyond understanding of disciplinary content to embrace academic and assessment literacies (Price et al. 2012). In the teacher-student meetings described herein, much discussion centred on generic academic issues such as building argument, criticality and correct grammar, albeit in the context of ecology. Discussion also covered the nature and use of assessment criteria and judging standards in order for the students to comprehend the standard they were trying to achieve and what they might do to reduce the performance gap. This begs the question of whether we have the volition, time and ability to teach assessment and feedback literacy to our students, combined with our disciplinary knowledge and ways of doing (Carless et al. 2011).

A dialogic feed-forward approach that enhances student self-efficacy and self-regulation might at its simplest involve a re-allocation of teacher time away from transmission of content and summative feedback to phased conversational feed-forward. It might, however, necessitate a re-allocation of resources in order to raise key performance indicators as teaching excellence is increasingly externally evaluated. How committed, within current resource constraints, are stakeholders to explicitly restructuring and reconceptualising feedback? A strategic approach might prove effective, in which enhanced resource is given at critical feedback moments when students are most open to learning development or find it particularly challenging (O'Donovan et al. 2016). This might be in the first year when students are broad-minded about the role of feedback in higher education. They should not face a multitude of tick-box forms at this time, focussed on benchmarking and grade justification, because this acts to reinforce a belief among students that feedback has little feed-forward function (Price et al., 2010). Resource should not, however, be aimed solely at first year assessment because many students become progressively disengaged with feedback over the course of their university programmes as a result of repeated unsatisfactory experiences (Price et al. 2011). Increasing resource must be weighed against developing stronger performance and responsibility in learners, benefiting the development of their learning skills across their university experience. If institutions recognise the importance of supporting student engagement with dialogic assessment and offering developmental feed-forward

opportunities, they can reimagine the transformative potentialities of the educational landscape and meaningfully prepare their graduates for future learning and dynamic twenty-first century careers.

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Table 1. Most common themes identified by students for high quality feedback (ranked by frequency of citation).

Theme	Exemplar Quote
1. Extensive and detailed	<i>'The feedback was detailed. You looked at every point, which I definitely found useful. It meant I could completely rethink the way I was writing it'</i> R8
2. Timely	<i>'This feedback, it's live, it's ongoing, it's relevant because it can be acted on ... it improved my understanding of what I had to do and ultimately my learning was better'</i> R24
3. Conversational	<i>'It was a face-to-face meeting actually going through my work and questioning why I had done things, so I would say it's the best feedback I've had'</i> R10
4. Directive	<i>'The option to submit and re-work was really beneficial ... you could really core into your draft, you know, what was working and what wasn't ... You could see the work evolve after the feedback'</i> R37
5. Personalised	<i>'You can address your essay issues more when it's one-on-one ... it's more specific and you get to talk and engage with your lecturer ... it helps you improve'</i> R21

Figure Legends

Figure 1. Dialogic feed-forward assessment cycle: process and principles (Modified from Beaumont et al. 2011).