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Self-assessment is about more than self: the enabling role of feedback literacy

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ABSTRACT

Both student feedback literacy and self-assessment are crucial for developing self-regulated and lifelong learning in higher education. The relationship between these two concepts is important but as yet understudied. Using self-assessment to develop students' feedback literacy has been mentioned in relevant literature, but how feedback literacy can facilitate self-assessment practice remains unclear. The purpose of this conceptual article is twofold. First, we articulate the interplay between feedback literacy and self-assessment based on a reframing and integration of the two concepts. Secondly, we unfold the self-assessment process into three steps: (1) determining and applying assessment criteria, (2) self-reflection, and (3) self-assessment judgement and calibration. For each step, we propose a pedagogical principle and recommend feedback practices that facilitate meaningful self-assessment. Implications for learning and teaching in both face-to-face and online learning environments are discussed.

KEYWORDS

Self-assessment;
feedback literacy;
internal feedback;
feedback seeking

Introduction

To achieve self-regulated learning and lifelong learning, students should effectively seek, process, and use feedback from different sources (*student feedback literacy*, Carless and Boud 2018) and reflect on their own work against appropriate criteria (*student self-assessment*, Boud 1995; Yan and Brown 2017). Feedback literacy is a capacity that students need for effective learning processes, whereas self-assessment is an important learning practice that students use to monitor and improve learning. Although review studies have demonstrated that, in general, self-assessment enhances students' learning achievements (Brown and Harris 2013; Sanchez et al. 2017) and promotes students' self-regulated learning and academic self-efficacy (Panadero, Jonsson, and Botella 2017), the effects of self-assessment interventions vary widely (Brown and Harris 2013). Further conceptual thinking is needed to explore what factors in the design and implementation of self-assessment can maximise the potential for desirable outcomes.

Although self-assessment is mainly an introspective action, it is about more than 'self'. The presence of 'others', in addition to 'self', play a crucial role in the self-assessment process (Boud 1999; Brown and Harris 2013; Yan and Brown 2017). If students are to adopt a pro-active role in self-assessment congruent with learning-focused feedback approaches, they need to seek and use feedback from suitable others or from the learning environment. Hence, students' feedback literacy could be a significant factor determining whether students can conduct

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meaningful self-assessment and benefit from it. Many scholars advocate self-assessment as one of the practices for developing students' feedback literacy (e.g. Carless and Boud 2018; Malecka, Boud, and Carless 2020; Hoo, Deneen, and Boud 2021), but how student feedback literacy relates to meaningful self-assessment is under-conceptualised.

In this conceptual article, we argue that feedback literacy is crucial for conducting meaningful self-assessment. In particular, we aim to address two issues: (1) the interplay between student feedback literacy and self-assessment; and (2) the kinds of feedback practices used to facilitate self-assessment. Addressing these issues responds to current needs because both feedback literacy and self-assessment are vital for successful independent learning in diverse contexts and disciplines, and in both face-to-face settings and online learning environments. We begin by reframing the conceptual basis for feedback literacy and self-assessment, followed by a discussion on the interplay between them and the common principles underlying both concepts. We next recommend some feedback practices integrated within self-assessment processes, and conclude with discussing implications for learning and teaching. Although we acknowledge that teacher feedback literacy is also an important dimension (see Carless and Winstone 2020; Boud and Dawson 2021), in this article we discuss feedback literacy from the student perspective.

Student feedback literacy

Feedback research has been undergoing a transition from a predominantly teacher-centred to a more learning-focused view (Boud and Molloy 2013; Winstone and Carless 2019). A learning-focused view emphasises the active role of students in making judgements about the quality of their own work in progress and taking informed actions in enhancing work. The term *feedback literacy* emerged under the learning-focused framework of feedback, and its conceptualisation and discussion is still ongoing. Carless and Boud (2018) defined feedback literacy as 'the understandings, capacities and dispositions needed to make sense of information and use it to enhance work or learning strategies' (p. 1316). Subsequent work highlighted the importance of embedding three elements of feedback literacy into curricula – seeking information on learning performance, processing feedback information and acting upon feedback information (Malecka et al. 2020). Emphasis on students generating their own internal feedback adds a further element to the focus on processing and acting (Nicol 2020).

Although a major reconceptualisation of feedback literacy is beyond the scope of this article, we do intend to reframe it as a capacity particularly relevant in self-assessment practices. Feedback literacy covers other elements, such as working with emotions and acknowledging feedback as a reciprocal process (e.g. Molloy, Boud, and Henderson 2020), but the seeking, generating, processing and acting stand out as the core behavioural elements that are most compatible with the feedback processes involved in self-assessment practices. Focusing on these behavioural elements, we aim to bridge feedback literacy and self-assessment and bring forth the pedagogical implications of the interplay between these two concepts.

Seeking feedback refers to students intentionally eliciting information about their own work for the purposes of improvement. It is a core behavioural element in feedback literacy as it links student learning to external inputs. Feedback seeking literature identifies two major feedback seeking strategies: inquiry and monitoring (Ashford and Cummings 1983; Leenknecht, Hompus, and van der Schaaf 2019; Joughin et al. 2021). Inquiry involves directly eliciting comments from others on progress or self-identified issues. Monitoring draws on information available in the environment, such as making comparisons with the previous performance of oneself or others, exemplars, assessment criteria or consulting other resources deemed relevant. Feedback information alone, however, does not necessarily bring about learning gains, unless students generate internal feedback through processing and using feedback information.

Thus, generating internal feedback is another core behavioural element in feedback literacy as it is about developing insights oneself, constructing meaning from feedback information and using it to influence future actions. Internal feedback is the new knowledge that students generate by comparing their current performance against some reference information (Nicol 2020). Feedback has to become *internal* to have an impact on student learning because all information, no matter where it is from, has to be interpreted and filtered by the student's own cognitive system before being used. Processing involves students making sense of the information, while acting is students taking actions to make feedback work for themselves. These may involve a combination of external and internal processes. Internal feedback is potentially even more powerful because it can be developed independently of the teacher (Nicol, Thomson, and Breslin 2014). In addition to processing and acting upon feedback information from external sources (e.g. teachers and peers), which are the main foci of previous feedback literacy conceptualisations, generating internal feedback emphasises students themselves producing insights by comparing their own work with reference information.

To develop our arguments further, we build on these strands of thinking and refocus feedback literacy on these two behavioural elements, i.e. feedback seeking and generating internal feedback. By highlighting students intentionally seeking feedback from various sources and generating internal feedback for enhancement purposes, these two elements draw insights from both feedback literacy and internal feedback literature. Such a refocusing not only maintains the emphasis on the active role of students in feedback processes, but also extends feedback literacy from mainly dealing with feedback from external sources to embracing internally generated feedback.

From a behavioural perspective, a challenge for internal feedback research and practice is the absence of traceable evidence regarding what new knowledge students actually generate (Nicol and McCallum 2021), which makes interventions aiming to improve the quality of internal feedback difficult. To enhance the generation of useful internal feedback and to maximise its power as a learning process, the implicit internal process can be turned into an explicit external one (Panadero et al. 2019). The more explicit and mindful the internal feedback, the more powerful it is for performance improvement (Nicol 2020).

Student self-assessment

Being able to self-assess is fundamental for self-regulated and lifelong learning (Panadero, Lipnevich, and Broadbent 2019; Yan 2020; Yan, Chiu, and Ko 2020). Although self-assessment could be understood as a skill or a capacity, in this article we conceptualise it as a learning practice from the pedagogical perspective. Not simply self-rating or grade guessing, self-assessment is a substantive process in which students seek and use feedback from various sources, reflect on it, and then judge their learning performance against selected criteria (Panadero, Brown, and Strijbos 2016). Yan and Brown (2017) empirically demonstrated a cyclical process model of self-assessment with three primary actions: (1) determining assessment criteria, (2) self-directed feedback seeking, and (3) self-reflection. In this article, we reframe the process by highlighting the enabling role of feedback seeking and generating internal feedback as core feedback literacy elements (see Figure 1).

When engaging in self-assessment, students first determine and apply the assessment criteria for the self-assessment. They then reflect on the quality of their own performance against the assessment criteria, and identify their own strengths and weaknesses. Based on such self-reflection, a self-assessment judgement is arrived at and this judgement is subjected to continuous recalibration according to different assessment criteria, feedback and/or self-reflection. In the whole process, feedback seeking plays an enabling role to support each step. For instance, students may seek feedback on the appropriateness of the assessment criteria and their understanding

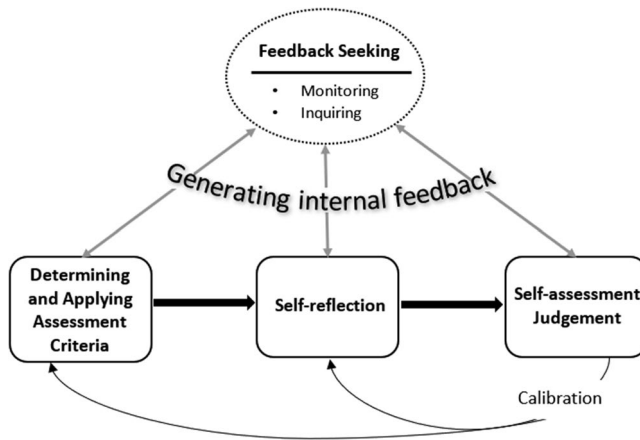


Figure 1. The self-assessment process integrating feedback literacy.

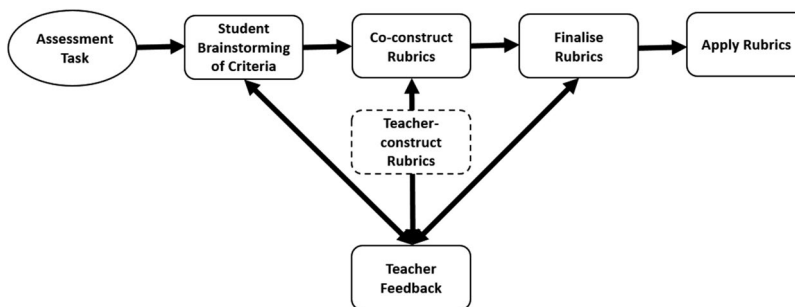


Figure 2. Co-constructing and applying rubrics.

of the criteria. Also, they may seek feedback to refine the direction and strategies of self-reflection, and enhance the accuracy of self-assessment judgement.

It is worth acknowledging that students can carry out self-assessment without seeking external feedback. They can cease self-assessing when the initial self-assessment judgement is made. However, a purely introspective self-assessment or a self-assessment judgement without calibration is more likely vulnerable to idiosyncratic heuristics and bias (e.g. overconfidence, relying on the amount of effort they have put rather than the quality of their performance) (Dunlosky and Rawson 2012; Yan and Brown 2017; Joughin, Boud, and Dawson 2019), which reduce the usefulness of self-assessment in improving performance and directing future learning.

Internal feedback plays a core role in self-assessment because a major purpose of self-assessment is to generate feedback for themselves with a purpose of enhancing future learning (Andrade 2010, 2019). In self-assessment, various reference information could be used to generate internal feedback, such as the assessment criteria, feedback from teachers/peers, or other different types of comparators (e.g. exemplars or work of peers). The use of different reference information may lead to different internal feedback (Nicol 2020) which, in turn, may result in different self-assessment judgements.

Interplay between feedback literacy and self-assessment

Although feedback literacy and self-assessment are distinct concepts in nature, they both play an important role in achieving central aims of education, such as self-regulated and lifelong

learning (Boud 1999; Carless and Boud 2018; Winstone and Carless 2019). Thus, to better understand these two concepts and effectively apply them in practice, an integrated approach appreciating their interplay should be adopted. During the self-assessment process many opportunities arise for developing feedback literacy, and students with promising levels of feedback literacy are likely to conduct more meaningful self-assessment.

Self-assessment has been widely regarded as one of the practices for developing students' feedback literacy. When designed and implemented appropriately, self-assessment provides opportunities for students to seek external feedback, as well as generate internal feedback through comparisons with different reference information about their own performance. Repeated practices of this nature are likely to enhance students' feedback literacy because, like other long-term capacities, the development of feedback literacy is a continuous and progressive process.

However, the other direction of the relationship, i.e. how feedback literacy relates to self-assessment, has not garnered sufficient attention. Our argument is that feedback literate students are more likely to make meaningful self-assessments which, in turn, can result in better plans for future learning. The enabling role of feedback literacy in the self-assessment process could be elaborated from two perspectives. First, self-assessment is not only about 'self'. The presence of the 'others', in addition to 'self', is also important in the self-assessment process because self-assessment requires students to seek feedback from the environment and/or relevant people, e.g. teachers, peers, and parents (Yan and Brown 2017). Seeking external feedback may enhance the accuracy and usefulness of self-assessment because the external feedback facilitates the calibration of self-assessment (Butler and Winne 1995; Boud 1999). As feedback literate students have more intentions to seek feedback and a better understanding of how expertise, trustworthiness and relational factors may influence the process and quality of feedback (Malecka et al. 2020), they are more likely to search for relevant feedback that can benefit their self-assessment judgements.

Secondly, during self-assessment, internal feedback is generated by comparing their own work against the reference information. The generated internal feedback can support different aspects in the self-assessment process, such as determining self-assessment criteria, identifying strengths and weaknesses and adjusting ongoing learning strategies (Yan 2020). As feedback literate students may generate better quality internal feedback with learning-focused information, they are in a promising position to use self-assessment results for improvement purposes.

Common principles underlying feedback literacy and self-assessment

Feedback literacy, as a capacity, and self-assessment, as a practice, are intertwined not only because they can inform and facilitate each other, but also because they share similar mechanisms influencing learning. Firstly, both feedback literacy and self-assessment contribute to self-regulated and co-regulated learning. Secondly, the active role of students is a common feature shared by both feedback literacy and self-assessment, and the key of their power on student learning. The effects of feedback literacy and self-assessment on learning depend on which ways and to what extent these two principles are enacted. In the following sections, the interplay between feedback literacy and self-assessment is elaborated according to these two underlying principles.

Linking to self-regulated and co-regulated learning

Both feedback literacy and self-assessment are theoretically linked to self-regulated and co-regulated learning. Self-regulated learning refers to students' active and planned actions in which students regulate their cognition, behaviour, motivation and emotions for the attainment

of learning goals (Zimmerman 2000; Pintrich 2004; Hadwin, Järvelä, and Miller 2011). Co-regulated learning is a transitional process in the learner's appropriation of self-regulation strategies through interaction with other students or teachers (Hadwin and Oshige 2011).

Feedback literacy is a fundamental capacity for students to self-regulate and co-regulate their learning. Feedback processes from a learning-focused perspective are built on interactions with others. Through interaction, students can learn from others and internalise self-regulation skills. Such an interaction-based learning process is a transition towards self-regulation (Allal 2016; Hadwin and Oshige 2011). Dinsmore and Wilson (2016) described scaffolded self-regulation as an independent learning process in which students self-assess their own performance with the support of external feedback. Without self-assessment, external and internal feedback, effective self-regulated learning is less likely to happen.

Self-assessment is a central process in self-regulated learning (Yan 2020) as it requires students to monitor their learning processes against intended goals and take actions to close the performance gap between the current and desired levels (Butler and Winne 1995; Andrade 2010). Engaging in self-assessment leads to a better self-regulation process (e.g. setting appropriate targets and adopting effective strategies) and optimised learning products (Harris and Brown 2018; Yan, Chiu, and Ko 2020). Self-assessment also provides opportunities for developing co-regulation because, as highlighted, input from 'others' is crucial for self-assessment (Panadero et al. 2019).

Active student roles

Another shared principle for feedback literacy and self-assessment is the emphasis on the active role of students in taking responsibility for their own learning. Active student roles in learning-focused feedback prioritise students seeking feedback inputs of different kinds and generating internal feedback. Unless students are actively positioned as feedback seekers and agents of their own change, they may neither be receptive to external information about their work, nor be able to use it (Boud and Molloy 2013). The teacher's role lies in designing learning environments that provide students with plentiful opportunities to actively involve themselves in purposeful feedback activities (Carless 2020). Emphasis on active student roles in feedback processes is supported by recent empirical work on the impacts of feedback (Henderson et al. 2019).

Self-assessment by nature encourages students to assume an active and independent role in the assessment process and contribute to both short-term (e.g. enhancing test scores) and long-term educational goals (e.g. developing self-regulated and lifelong learning) (Yan and Boud 2021; Yan and Brown 2021). Students' active role is the defining feature of self-assessment, no matter how its processes are enacted. Although in some scenarios the teacher may initiate the self-assessment, design the assessment tasks or provide the assessment criteria, it must be the students who make the self-assessment judgements. Students taking responsibility is a key for the enhancement of self-assessment skills within active learning pedagogy (Aricò and Lancaster 2018).

Recommended feedback practices in the self-assessment process

In this section we unfold the self-assessment process into three steps, as discussed earlier (see [Figure 1](#)), (1) determining and applying assessment criteria, (2) self-reflection, and (3) self-assessment judgement and calibration. Each step of the self-assessment process carries opportunities for developing feedback literacy; while feedback literacy can facilitate each step of self-assessment in generating desirable outcomes. For each step, we present some recommended feedback practices that facilitate self-assessment and the pedagogical principle that guides the design of these feedback practices (summarised in [Table 1](#)).

Table 1. Pedagogical principles and recommended feedback practices for each step of the self-assessment process.

| Self-assessment steps | Design principles | Recommended feedback practices |
|---|---|---|
| Step 1 (determining and applying assessment criteria) | Enhancing understanding and application of criteria through feedback processes | Students and the teacher co-construct performance rubrics |
| Step 2 (self-reflection) | Making explicit the internal feedback generated by self-reflection | Making internal feedback explicit via written reflections |
| Step 3 (self-assessment judgement and calibration) | Facilitating the calibration of self-assessment judgement through interaction with different feedback sources | Interactive calibration process |

Step 1: Determining and applying assessment criteria

Determining appropriate assessment criteria and applying them to one's own work-in-progress are the basis for meaningful self-assessment. The pedagogical principle for this step is *enhancing understanding and application of criteria through feedback processes*. Criteria carry promising potential to support student learning when they are co-created or negotiated with students because they make expectations for good performance on an assessment task transparent. Unfortunately, criteria are seldom transparent to students and their understanding of criteria is sometimes taken for granted. Feedback processes support this step in that teacher feedback or student feedback seeking can clarify the criteria; while feedback from students to teachers can surface their understanding of criteria and inform teachers' follow up.

Recommended practices for step 1

A recommended practice in using feedback processes to enhance understanding and application of criteria is students and teachers co-constructing performance rubrics and applying them to student work (see [Figure 2](#)). Teachers can start by introducing an assessment task and inviting students to brainstorm in pairs or groups the criteria for good performance on the task. Based on this discussion, teachers and students can then co-construct a rubric, or if teacher preference or quality assurance procedures dictate, a teacher-constructed rubric can be shared and discussed with students. The whole process is informed by feedback processes involving both teachers and students. By arranging student peer review or the analysis of exemplars of different quality, teachers enable the application of criteria and student appreciation of what quality work looks like (see also step 2). Through applying rubrics to their own work and that of others, students are able to practice the application of criteria, refine their understandings of criteria and generate feedback insights.

Step 2: Self-reflection

Self-reflection in the self-assessment process refers to students' reflective thinking about their own performance. This self-reflection is typically in relation to the assessment criteria and feedback information of different forms. A core aim of the self-reflection is for students to generate internal feedback on the strengths and weaknesses of their task responses. Thus, the pedagogical principle for this step is *making explicit the internal feedback generated by self-reflection*. Although internal feedback plays a core role in the whole self-assessment process, it is vital in Step 2. As indicated earlier, internal feedback can be made explicit by requiring students to write an account of what they have learnt from making these comparisons between their own work and other reference information (Nicol and McCallum 2021). Making internal feedback explicit in this way potentially sharpens its generation and impact.

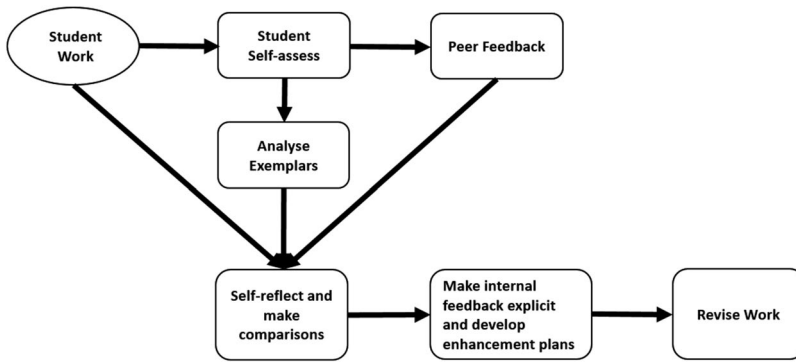


Figure 3. Making internal feedback explicit.

Recommended practices for step 2

Students self-reflect their performance against assessment criteria and various reference information. Recommended practices for this step (see Figure 3) draw on the work of Nicol. Students produce a draft response to an assessment task and make a preliminary self-assessment of their work. Next, they are primed to generate internal feedback through being exposed to reference information or comparators. The reference information would typically be other student work requiring peer review; or exemplars of different quality produced by previous or current students. In both cases, it is desirable for students to be exposed to a range of quality, with at least one sample representing high quality work (Nicol and McCallum 2021).

In relation to these forms of reference information, students self-reflect on their own work by comparing their own performance with that of others, and drawing inferences for improvement. The processes are made more explicit when students write reflective accounts of the differences between their work and that of the reference information by responding to prompts, such as: What are the main differences between your work and that of others? From analysing other work, what can you do to improve your own assignment? On the basis of these self-reflections, students can develop and enact action plans for improving their own draft derived from the comparisons they have made. The internal feedback generated by students then informs the revision of their draft, which enables the taking action aspect of feedback literacy. Self-reflection and then action components offer promising potential to enhance student performance in ways that encourage learner responsibility and are workload-efficient for teachers.

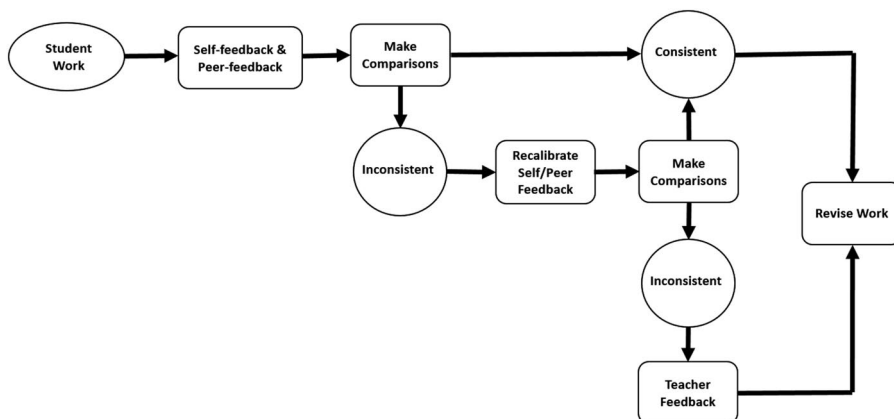


Figure 4. The interactive calibration process.

Step 3: Self-assessment judgement and calibration

The pedagogical principle for Step three is *facilitating the calibration of self-assessment judgement through interaction with different feedback sources*. As discussed earlier, self-assessment is a cyclical process in which the initial self-assessment judgement is subjected to continuous calibrations. Calibration not only can increase the accuracy of self-assessment judgement but also can develop students' self-assessment ability over time. Meaningful calibrations of self-assessment judgement are usually based on rethinking of the assessment criteria and/or additional feedback information. Thus, the more thinking students have about the assessment criteria and more interactions with different feedback sources students experience, the more benefits students are likely to obtain from self-assessment because the insights from the interactions help to calibrate the self-assessment judgement.

Recommended practices for step 3

Following this reasoning, we recommend an interactive calibration process during which the calibration of self-assessment judgements is facilitated through interactions with various feedback sources. Figure 4 presents an elaborative example. Students submit their work, together with their self-feedback. They are then randomly paired up and each student assesses their partner's work against the same rubric by providing both grades and written feedback. The self and peer grades/feedback are then compared. If the discrepancy is reasonably small, the process ends and students revise their work. If the discrepancy is significant, the reviewee and reviewer discuss and justify their judgements, and possibly recalibrate self- and/or peer-assessment results. The revised self and peer grades/feedback are compared again. If the discrepancy is still significant, the teacher intervenes by reviewing the work, self and peer-assessment results, and providing recommended grades and feedback. The process could be more workload-efficient with the support of online platforms. The interactive calibration process provides students with plenty of opportunities to interact with feedback from teachers and peers, which may help enhance their understanding of assessment criteria, deepen their self-reflection and calibrate their self-assessment judgements.

Implications and conclusion

This article highlights the interplay between feedback literacy and self-assessment based on a reframing and integration of these two concepts. Feedback literacy is reframed to emphasise two key behavioural elements: feedback seeking and generating internal feedback. These two elements are central to the practice of self-assessment which involves others in addition to the self. The enabling role of feedback literacy in the self-assessment process needs to be more widely utilised to inform productive student learning.

As a learning practice, self-assessment provides students with learning opportunities at different stages (Yan and Boud 2021). Thus, a significant benefit of emphasising the enabling role of feedback literacy for self-assessment is that it enriches the interplay between the two concepts. Feedback seeking is valuable in supporting students to reflect on the gap between the current and desirable levels of performance before they decide what kind of feedback is needed, where and how to seek feedback. Generating internal feedback is a powerful part of the process because students can use different reference information in order to increase the accuracy of self-assessment judgements and enhance learning performance on current and future tasks.

The practical implications of the interplay between these two concepts arise from three perspectives. First, feedback practices, such as those recommended earlier, should be embedded purposefully within the design of self-assessment activities in cumulative ways in order to enact positive impact. Through purposeful and repeated practices, students can develop their feedback literacy which, in turn, help students seek, generate, process and use performance-related

information in self-assessment for enhancement purposes. When sustained development of self-assessment and feedback literacy is embedded cumulatively into disciplinary curricula, students are primed for independent, lifelong learning.

Secondly, when implementing self-assessment activities, it is important to build a trusting, collaborative learning environment that is supportive to students' feedback seeking. As feedback seeking is always a cognitively and emotionally demanding behaviour (MacDonald et al. 2013; Bowen, Marshall, and Murdoch-Eaton 2017), enhancing the availability of feedback and encouraging students' initiatives in seeking feedback are crucial for successful self-assessment. Students can generate their own self-directed feedback seeking or these opportunities can be engineered by teachers, e.g. through encouraging feedback requests on assignment cover sheets (Winstone and Carless 2019).

Thirdly, scaffolding is necessary for students to make use of feedback seeking for meaningful self-assessment. A valuable role of the teacher is in modelling appropriate feedback seeking strategies in the self-assessment process by demonstrating how they have profitably sought feedback to improve their research or teaching. Before submitting a manuscript, for example, scholars often seek feedback from colleagues and may include specific feedback requests whereby they invite the peer to comment on particular aspects of the manuscript, such as the methodology or the significance.

As much teaching in higher education was forced to move to an online mode due to COVID-19, educators are seeking ways to enhance student learning under such circumstances. The ability to self-assess productively is a crucial learning attribute in almost all circumstances. In the online learning environments of the pandemic where relational support is often curtailed, it is arguably even more important that students are able to self-assess themselves in accurate and reflective ways. Our analysis of the interplay between feedback literacy and self-assessment opens up significant issues for practice and further research.

There are various practical issues that need to be considered. Meaningful self-assessment involves both introspective processes, which require a high level of self-awareness and self-regulation, and interpersonal processes, which rely on relational and communication skills. Hence, self-assessment may be initially challenging because students need time to become familiar with expectations and processes. Higher achievers tend already to be feedback literate and effective at self-assessment, whereas lower achievers may avoid challenging feedback interactions and make unrealistic self-assessment judgements, e.g. over-estimating their capacities due to self-serving bias. Lower achievers need support, scaffolding and practice to develop capacities to exploit feedback possibilities of different kinds (Pitt et al. 2020) which, in turn, carries the potential to contribute to productive self-assessment. Developing self-assessment and feedback literacy requires space in the curriculum, necessitating some reduction in content coverage in favour of the development of learner capacities for independent learning.

Effective self-assessment often correlates with high grades, and this could be an attractive finding to share with students. When students are supported to become effective at carrying out self-assessment, there is potential to reduce teacher workload because feedback responsibilities are shared. In large classes, the teacher cannot feasibly be the sole source of feedback so it is important that students become learning resources for themselves and others (Yan et al. 2020). It is also worth noting that the enactment of self-assessment and feedback literacy may vary across disciplines and learning tasks. For some learning tasks with fixed answers, there is little space for particular self-assessment steps (e.g. determining and applying assessment criteria) and, therefore, some suggested feedback practices (e.g. co-constructing and applying rubrics, as shown in Figure 2) may not be applicable or need adaptation. In principle, the more divergent the pool of responses to a learning task, the more learning opportunities can be generated by self-assessment and feedback practices.

There are a variety of possibilities to advance this line of research. Based on the conceptual relationships outlined in this article, future research using fine-grained qualitative approaches

could be used to obtain empirical evidence regarding the mechanism of the interplay, i.e. how and in which conditions feedback seeking and internal feedback facilitates the self-assessment process. It would also be valuable to investigate how students' feedback literacy influences the implementation and consequences of self-assessment with longitudinal or experimental designs. The potentials of different feedback practices could also be empirically examined with respect to their effectiveness in facilitating self-assessment and maximising positive impacts on learning in different pedagogical contexts. Feedback literacy and self-assessment are facilitated within specific disciplinary contexts, and these disciplinary manifestations are an important strand of further research. This article has focused on student feedback literacy, whereas teacher feedback literacy also plays a crucial role in supporting the development of student self-assessment, and merits further investigation.

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Disclosure statement

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