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HELPING LEARNERS ACTIVATE PRODUCTIVE INNER FEEDBACK: USING RESOURCE AND DIALOGIC COMPARISONS

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International research on feedback in higher education is dominated by the idea that feedback is a two-way communicative exchange, dialogue that requires action by the students as well as the teacher. In line with this framing, the prime focus of recent research is on how to increase students' engagement and agency in that dialogue. Researchers describe this as developing students' recipience for feedback (Winstone et al, 2017), as helping them take more agency in co-constructing feedback meanings (Price, Handley and Miller, 2011), and more recently as developing student feedback literacy (Carless and Boud, 2018).

However, this way of thinking about feedback separates formal feedback processes from natural feedback processes. Students (like all of us) are generating internal feedback all the time, by comparing their thinking, actions, and productions against different kinds of external information (Nicol, 2020: 2021). While that information might, at times, derive from comments received or dialogue with others, it also always comes from information in instruction documents, textbooks, videos, online resources, or derived from observations of others, etc. Making feedback comparisons is a natural, ongoing and pervasive process, a process by which students regulate their own performance and learning. In this view, improving student feedback literacy is about improving their capacity to generate productive internal feedback from multiple sources, not just from comments or dialogue. Figure 1 depicts the overlapping sources and types of information that students use to generate internal feedback.

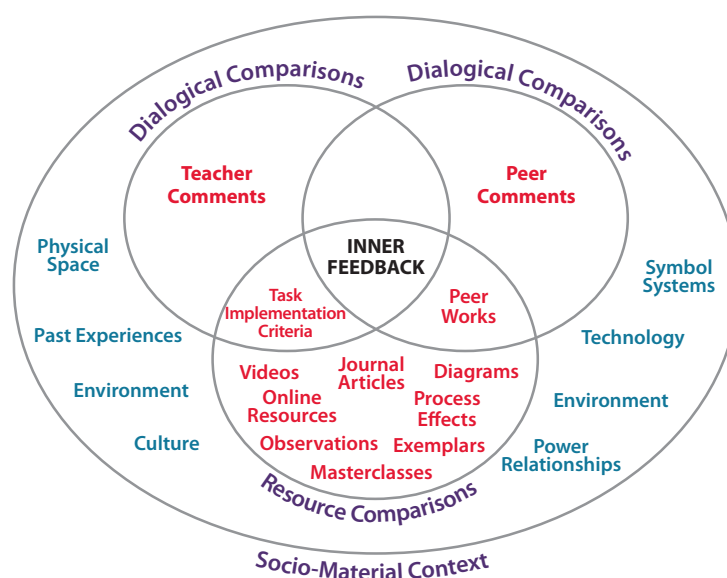


Figure 1: How students generate inner feedback through making dialogic and resource comparisons

At the Adam Smith Business School, we have been researching what inner feedback students generate from comparisons other than comments and dialogue, and from multiple comparisons involving resources and including comments and dialogue. The results are quite remarkable. In many cases, students generate better feedback, ideas for improvement, than they generate from received comments. They always, however, generate feedback that a teacher might find difficult to provide (e.g. self-regulatory) and feedback that complements what they do provide (Nicol and McCallum, 2021; Nicol, D., and G. Selvaetnam, 2021)

This research also shows how one might address two, to date, seemingly intractable tensions in feedback provision in higher education:

- i. that too much feedback from lecturers can undermine the development of student independence (especially with weaker students); and
- ii. that the more feedback teachers provide the higher their workload.

These tensions can be addressed by balancing resource comparisons with dialogical comparisons (Figure 1) and by sequencing resource comparisons before dialogical comparisons, especially if the latter involve the teacher rather than peers. Each comparison type has its own merits and limitations.

How to unlock the potential of inner feedback?

Although internal feedback happens naturally, it is usually implicit and occurs below conscious awareness. Hence, its educational power remains largely untapped. In practice, the key to harnessing its power is to have students make deliberate comparisons and make the outputs of those comparisons explicit/tangible in writing, discussion or in action. Note, that this is quite different from telling students to 'go and look at an article' or 'go and check out that online resource'. This builds students' own natural internal feedback capacity and in turn their ability to regulate their own learning.

The sequence for students is: DO some work; make some COMPARISONS; make outputs of those comparisons EXPLICIT. The role of the lecturer is to facilitate feedback comparison opportunities by structuring tasks, selecting comparators and by formulating instructions to guide students in the focus and outputs of their comparisons (see Figure 2).

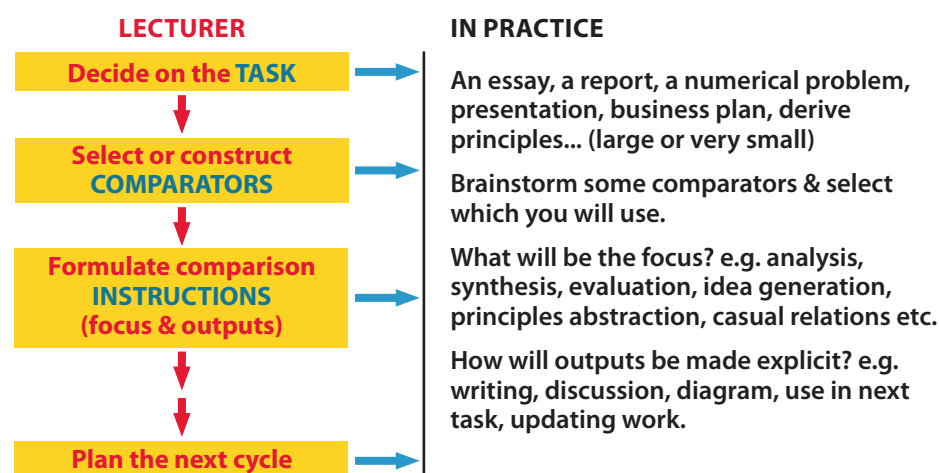


Figure 2: The iterative design steps for implementing comparison-based feedback

Practical Examples

The following are some implementation examples from the Adam Smith Business School.

Final year thesis writing: Economics literature review

Final-year economics students wrote a draft literature review and then compared two high-quality published reviews with each other. Then they compared the output of that comparison against their own draft literature review. Importantly, all three literature reviews were in different topic areas.

From the first comparison, students abstracted and wrote down the principles and standards underpinning a high-quality review. From the second, they identified how their own reviews compared against those principles and standards, and generated feedback on their own literature review which they used to update it. They also wrote down what feedback they wanted from their supervisor after these two comparisons. The results showed that all students generated inner feedback that either matched or closely matched that of their supervisor and that they were better able to identify the feedback they required from the supervisor. The supervisor was surprised by the extent of the students' self-generated feedback, and from the drafts they submitted and the feedback they had already generated was better able to target her own feedback. This study shows how making resource comparisons before supervisor feedback increases students' independence in their writing and reduces their need for supervisor feedback.

The implementation could be further enhanced by adding opportunities for peers to share the feedback they generated from the first comparison (of the two quality literature reviews) before making the second comparison (where they wrote feedback on their own literature review). This would result in the outputs of the first comparison (students' identification of the principles of a good review) being a resource for a dialogical comparison (i.e. comparing the principles they derived) which, in turn, is a resource for students' individual explicit inner feedback comparison.

Final-year BEng and MEng students taking an entrepreneurship course

Final-year engineering students taking a core course in entrepreneurship were required to identify a suitable product or service and then use lean start-up methodology to build a minimum viable product (MVP), i.e. a version of that product that could be tested for its viability with a specific customer group. They then tested that the viability of the product with potential clients. The course was delivered online and involved both synchronous and asynchronous activities. Over the timeline of its delivery, students made multiple comparisons, dialogical as well as against resources (sequential and simultaneous). This overall intention was to help them enhance the quality and viability of their product and at times to 'think out of the box'. The resource comparators included theoretical and practical articles on the creation of MVPs from which they were asked to make theory-practice comparisons, videos and masterclass input from experts on relevant topics from which they evaluated and improved their own MPV, rubric comparisons to gauge how others might judge their work and lecture input comparisons to move their thinking forward. They also engaged in dialogical comparisons based on comments from peers, the teaching team and at times from experts and they also sought out verbal feedback from potential clients. Figure 2 provides an overview of the multiple comparisons involved.

Early results indicate that these students produced much higher quality MVPs compared with those in previous years. They demonstrated a wider understanding of the underlying principles and required less input and feedback from the teaching team.

While these examples come from final-year students there are many examples with undergraduates who benefit in equal measure (Nicol, 2021).

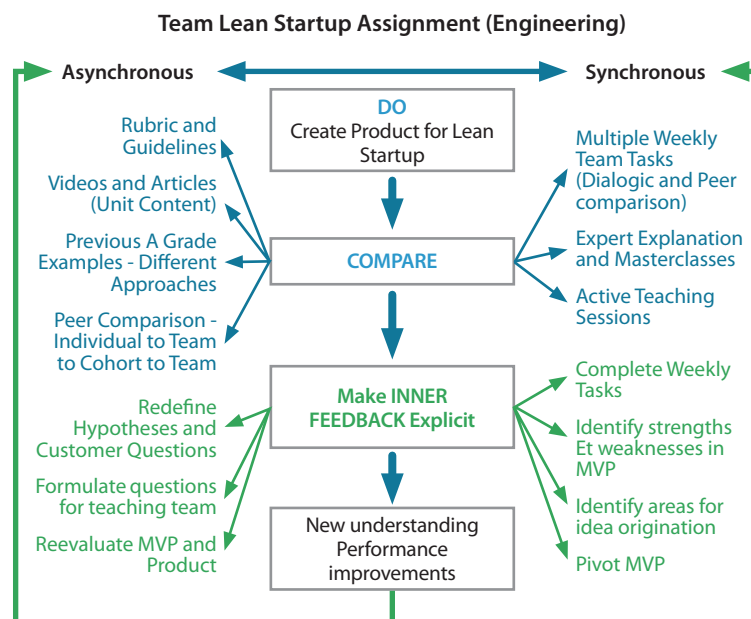


Figure 3. Example of the multiple feedback comparisons involved in the entrepreneurship implementation

Some tips for lecturers

- In planning, it is recommended that lecturers start with material comparisons such as documents, videos and observations, then amplify with peer and other dialogical comparisons.
- Stage and vary the comparison information across the course. The more comparisons students make, the more elaborate the feedback they generate and the more they learn. Different comparators and different combinations of comparators generate different kinds of feedback.
- Give comments sparingly after other comparisons and resist commenting on the comparisons you ask students make. Where possible stage another comparison.
- Over time have students select feedback comparison resources for each other.

Why implement this comparison methodology?

- It connects formal and informal feedback processes in mutually powerful ways.
- Making comparisons explicit builds students' own feedback capability, metacognitive knowledge, and ability to regulate their own learning.
- By bringing into play multiple information sources for comparison beyond comments students generate a greater range of feedback.
- Exposes students to multiple lenses on their own work and thus builds perspective shifting and expertise.
- Reduces lecturers' commenting on workload: lecturers provide comments only on what students can't self-generate from other comparative resources
- It also provides valuable information about what comments students really need.

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- Link to 15-minute explanation on youtube <https://www.youtube.com/watch?v=rh-MNcnle7E>