CHAPTER 7

IMPLICATIONS FOR STUDENT FEEDBACK

Changing the Game

INTRODUCTION

Student feedback is currently at the fore-front of higher education discourse, with students apparently less satisfied with feedback than with most other aspects of the student learning experience (Evans, 2013). In this chapter I will not attempt to review the extensive literature on this topic, but only to consider key aspects that relate to the knowledge structures approach that is the focus of this book. In this context feedback is seen as a vital link between the theory that supports teaching (Chapter 6) and the focus of development of academics in dialogue with their students (Chapter 8). Many authors writing in the specialist feedback literature, as well as those appearing in the disciplinary literature, are keen to emphasise the importance of feedback and to provide tips on enhancing processes of feedback delivery (e.g. Clynes & Rafferty, 2008; Koh, 2008, 2010). These studies consider various attributes of feedback that may contribute to its effectiveness (timing, frequency, positive/negative voice etc.). However, they do not consider the relationship between the structure of the feedback given and its context-dependency with the knowledge structure of the discipline upon which the feedback is focussed – particularly in terms of semantic gravity (Maton, 2009). This chapter considers feedback in a way that may help to integrate the process of feedback into the curriculum, to increase its effectiveness by aligning feedback initiatives to a knowledge-structures perspective of teaching and learning.

STUDENT CONCEPTIONS OF FEEDBACK

The literature on assessment and feedback appears in many ways to be separate from the literature on teaching. For example, the analysis of feedback effectiveness does not seem to acknowledge the environmental range in which feedback may be delivered. So students faced with a teacher who demonstrates a 'knowledge transmission' conception of teaching, in which the emphasis is on imparting information, may benefit from a different mode of feedback from those students faced with a teacher who adopts a 'learning facilitation' conception of teaching where the emphasis may be on knowledge creation. Considering feedback theoretically, in the absence of contextual factors, would seem to have limited potential utility for the student.

In complex learning environments students do not always recognise feedback when it is offered. In the minds of many students feedback is synonymous with

written feedback on formal assessments rather than anything else. Informal and verbal feedback if often lost in the noise of the classroom. McLean et al. (2015) have focussed on students' conceptions of feedback and the ways in which these views overlap with student and teacher conceptions of teaching. These authors have identified four qualitatively different experiences of feedback:

1. *Feedback as telling*, in which the uni-directional transmission of 'correct' answers puts emphasis on a single, expert voice. This view of feedback assumes a passive role for the student in which dialogue does not contribute to understanding.
2. *Feedback as guiding* in which the students are being pointed in the right direction so that they may learn by applying knowledge to practice. In such instances students may start to think about feedback to help them work out the answer.
3. *Feedback as developing understanding* which requires students to be more active, using feedback as a tool in the construction or adjustment of knowledge structures.
4. *Feedback as opening up a different perspective* in which it deliberately introduces different views and requires students to be actively engaged in interpreting and evaluating knowledge. McLean et al. (2015) recognise a strong resemblance here with the perspective of Marton et al. (1993) of learning as seeing something in a different way. This, in turn, resonates with the idea of acquiring threshold concepts.

The first two conceptions of feedback are largely passive and uni-directional, moving students towards an agreed, and possibly fixed, knowledge structure. The last two conceptions of feedback require more active student engagement and tend towards the construction of personal knowledge structures. The increased levels of metacognition that are implicit in the last two perspectives encourage a better fit with the development of adaptive expertise and the emergence of the expert student. The analysis by McLean et al. (2015) stops short of considering the relationships between the four perspectives, how they may fit into different points of a student learning cycle (Figure 35) or contribute to the development of complementary knowledge structures (Figure 28). This is research that still needs to be developed, though we can anticipate that each perspective has a role to offer. Feedback 'as telling' is valuable where comment is needed immediately on procedures, for example where issues of safety may be important (e.g. 'don't touch the live wire!', or 'don't give this patient aspirin'.). Feedback as 'opening up different perspectives' may take longer to process and influence practice, requiring a period of reflection (e.g. 'is that the only way to teach Physics?', or 'how would the cold war have played out differently if JFK had not been assassinated?').

FEEDBACK WITHIN A KNOWLEDGE STRUCTURE

The knowledge structures perspective of learning and teaching lays emphasis on the ways in which ideas are linked – recognising the differences between the linear (practical) knowledge that is acquired through experience, and the theoretical

(hierarchical) knowledge that is more conceptual in nature (e.g. Kinchin, 2013). Feedback needs to be considered as part of this perspective rather than as an adjunct to it. This is touched on by Nicol (2013: 36):

> As well as identifying the need for local repairs in the assignment at hand, ideally students would also need to create some permanent revisions to their knowledge networks that can be brought to bear when they are asked to tackle a new but similar assignment in the future. The latter is necessary if learning is to be transferred to new contexts.

This can be viewed from a knowledge structures perspective in which the immediate, context-bound comments about factual inaccuracies and expressive errors can be viewed as the linear/procedural components of feedback, whilst the more profound, general comments about theoretical weaknesses can be viewed as the networked/conceptual components of feedback. Therefore, if feedback is to serve the function of progressively enabling students to better monitor, evaluate and regulate their own learning independently of their teachers (as suggested by Nicol & Macfarlane-Dick, 2006), then students must learn to navigate between the linear/procedural and the networked/conceptual (Kinchin & Cabot, 2010). As this process is repeated over time, students will negotiate the 'semantic wave' described by Maton (2013). If this process is integral to the student's progress through the curriculum, then it is also important for the process of feedback to replicate this pattern so that it is seen as an activity '*to permeate the curriculum rather than an activity that appears within it from time to time*' (Molloy & Boud, 2013: 25).

Molloy and Boud (2013; 30) are critical of formulaic processes in which they see students and teachers as complicit in participation of transmissive rituals that have been observed within higher education, and have been cited by Kinchin, Lygo-Baker and Hay (2008) as contributing to cycles of non-learning. Where feedback is seen as ineffective, there seems little point in simply repeating the same practices with greater frequency or intensity – the process needs to be reconceptualised at a more fundamental level.

SEMANTIC PROFILES

This perspective on feedback is enhanced by consideration of work by Maton (2013) which adds the dimension of time by considering understanding as being generated by a series of waves as the learner navigates a path through cycles of learning. Maton refers to the concepts of semantic gravity and semantic density (as discussed in Chapter 6).

When changes in semantic profile (Gravity and Density) are presented as a time curve, a semantic wave is made visible as the learner oscillates between peaks and troughs (Figure 37). This oscillation resonates strongly with the structural transformations between chains of practice (SD–, SG+) and networks of understanding (SD+, SG–) observed by Kinchin and Cabot (2010). As the learner

moves from a chain of practice to a network of understanding s/he has to move from a concrete example to a more abstract idea. When considering the effectiveness of feedback we need to think about how feedback comments reflect movements between knowledge structures and along the semantic wave. This is considered here in terms of feedback on teaching as well as feedback on learning – again, two linked ideas that are not often connected in the literature.

FEEDBACK ON TEACHING

Many of the barriers to effective feedback given to learners are heightened when feedback is given to teachers on the quality of their classroom 'performance', and reflections on practice are often preceded by comments about lack of training, time and incentives that impede engagement and change (e.g. Brownell & Tanner, 2012). Despite what Gormally et al. (2014) have described as '*heroic dissemination of evidence-based teaching practices and their documented improvement on student learning*', many faculty members are reluctant to adopt new practices or to 'come out' as teachers (Brownell & Tanner, 2012). And yet Gormally et al. (2014: 188) argue that '*providing faculty with formative teaching feedback may be the single most under-appreciated factor in enhancing education reform efforts*'.

Feedback on teaching might be from the observable and practical acts of teaching in a particular context (including developing outcomes, classroom strategies and assessment techniques), to the more conceptual elements that underpin those acts (Figure 27), including less tangible concepts such as 'theories', 'values' and 'beliefs'. The transformatory oscillations between knowledge structures (Kinchin & Miller, 2012) would then appear to offer a direct parallel to the formation of a semantic wave (Maton, 2013). As learners are required to 'unpack' meanings as they move from technical terms to everyday meanings, the visualisation of the structure of knowledge by concept mapping (Novak, 2010) offers a practical tool to support this.

Without this oscillation between structures (Kinchin & Cabot, 2010), and hence between segmental and cumulative learning (Maton, 2009), teaching is likely to develop through exclusively context-specific segmental learning as a 'tips-for-teachers' approach, working entirely in areas of high semantic gravity (SG+) and low semantic density (SD–) that would consequently lack academic rigor and avoid engagement with the underpinning pedagogy (Kinchin, 2013). Participants might initially favour a programme that allows them to privilege and protect the more practical outcomes that might be seen to offer immediate practical utility that are closely aligned to a particular professional identity (e.g. Green & Little, 2013). However, such a programme would not prepare academics for a career in an evolving teaching environment by developing adaptive expertise or give them the tools to actively contribute to the direction of its evolution (i.e. it would exclude them from the 'powerful knowledge' of the profession as described by Wheelahan, 2010). Other implications for teacher development are explored more fully in Chapter 8.

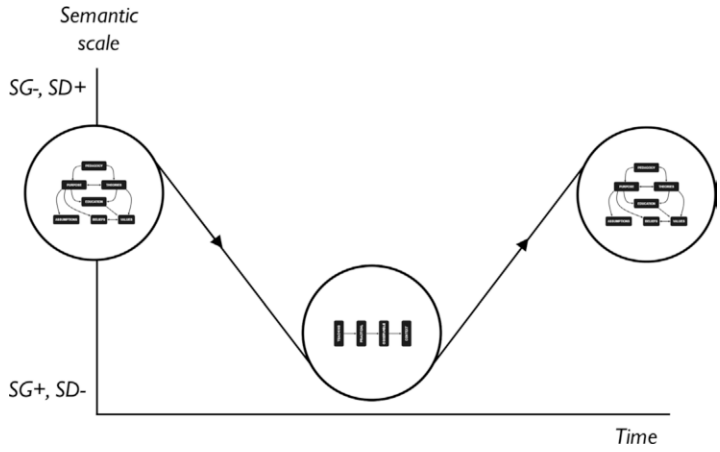

Figure 37. A semantic wave to indicate the structural implications of moving up and down the semantic scale over time and the resulting oscillations between networks of understanding at the peaks, and chains of practice in the troughs (details of the concept maps within this figure can be seen in Figure 27)

FEEDBACK ON LEARNING

When considering feedback in undergraduate learning, the distinction between feedback on formative and summative assessments is often centre-stage, with encouragement for academics to insert more formative assessments in their teaching even though this may seem counter-intuitive to the strategic student who wants to invest time and energy in high-reward activities represented by summative assessments. Formative assessment, defined as information communicated to the learner that is intended to modify thinking or behaviour to improve learning (Shute, 2008), then also has a role in helping to cultivate the appropriate gaze amongst students so they may be able to master semantic gravity. Maton (2014: 123) sees this as the key for successful meaningful learning:

> A growing number of studies are showing that the key to academic achievement in many subjects lies neither with stronger nor with weaker semantic gravity, but with extending the range of movements between them….These movements in semantic gravity provide a necessary (though not sufficient) condition for the decontextualization and recontextualization of knowledge and thus the possibility of cumulative knowledge-building and learning.

Figure 38 depicts three semantic profiles. A1 represents a *high sematic flatline* which is indicative of teaching that is context-independent and features high conceptual condensation (i.e. lots of theory, but no opportunity to operationalise this in practice). A2 represents a *low semantic flatline* which is indicative of teaching

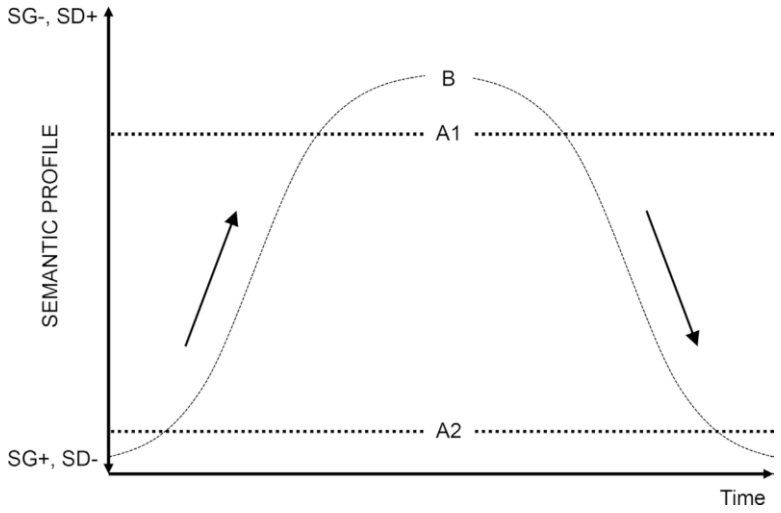

Figure 38. Three semantic profiles (Redrawn from Maton, 2014)

that is context-dependent and descriptive, but with little theoretical underpinning. In contrast to these, B represents a semantic wave in which the upward arrow represents the abstraction of organising principles into a condensed language that rises above the concrete particulars of a given context. In contrast the downward arrow represents the fleshing out of theory into concrete examples. This could be seen as the packing and unpacking of the subject.

The distance between A1 and A2 could be seen to represent the theory-practice gap across which students are required to operate within many disciplines, with theory having low semantic gravity and practice having high semantic gravity. Whilst teaching needs to allow students to operate across the semantic plane, feedback also has a role in supporting this movement. Feedback that reproduces information from teaching examples or re-words or re-structures input into a clearer form tends towards a stronger semantic gravity. Feedback that introduces general principles or generalizations about concepts or events tends towards a weaker semantic gravity. By modelling these movements in student feedback, comments will draw the student gaze across the theory-practice gap and help them to navigate the semantic wave. This is a highly significant point as '*The theory-practice gap is arguably the most important issue in professional practice today, given that it challenges the concept of research-based practice*' (Scully, 2011: 94).

FEEDBACK AND THRESHOLD CONCEPTS

Powerful knowledge is a product of learning described variously as deep (Marton & Säljö, 1976), meaningful (Ausubel, 2000; Novak, 2010) and cumulative

(Bernstein, 2000; Maton, 2009), in order to generate qualitatively rich understanding that is in turn related to appropriate practice knowledge (Kinchin & Cabot, 2010) – see Chapter 5. Maton (2013) described a universal desire for the construction of this type of knowledge that aims to generate ideas that have utility beyond the specifics of their originating contexts. Characteristics of teaching that will support this learning have been specified by Biggs (2003: 17), including:

- Make the structure of the subject explicit
- Encourage the active participation of students
- Build on what the students already know
- Assess for structure rather than independent facts

This resonates with Land and Meyer (2010: 76) whose 'desiderata' for a manifesto for change in assessment practices includes '*seeking new modes of mapping, representing and forming estimations of students' conceptual formation in all modes of liminality*' and not just 'before and after' teaching. Sadler (1983: 74) has argued that processes of delivering iterative feedback are largely lacking, and that '*students should be given an opportunity and incentives to rework and resubmit papers, with continuous rather than single-shot access to evaluative feedback during the reworking*'. The dialogue that can be supported during this interaction is important to help students develop new conceptual understandings (Orsmond et al., 2013).

Feedback on minor contextual or procedural matters of learning might be less crucial than feedback on issues that relate directly to students' acquisition of threshold concepts. If the threshold concepts of a discipline are not acquired, then the disciplinary structure into which other aspects of the subject should fit will not develop appropriately. In the absence of a structure into which the feedback is supposed to contribute, the feedback is likely to appear as a collection of isolated anecdotes about disconnected facts and figures. And yet the literature on assessment and feedback has paid little attention to the issue of feedback on emerging threshold concepts. Walker (2013) has considered the synergies that exist between schema theories of learning and threshold concepts. Assuming that an academic's knowledge will be different in structure to that of the students, Walker offers three ways that these differences can be imagined (Figure 39).

In considering 'incompatibilities', Walker (2013: 258) states that not only is the knowledge incompatible between the academic and the student, but the perception of the learning situation is also incompatible so that feedback is likely to misinterpreted by students. In such cases, it is suggested that the threshold concept will be inaccessible and the student will become 'stuck' at this point in the curriculum without necessarily understanding why – other than '*it's hard!*'. Unless the situation is understood by the parties concerned, it is likely that at this point the student will retreat into a non-learning approach in which conceptual development will be arrested. However, where student and academic knowledges are different but compatible the threshold concept can be made accessible to the student by relating

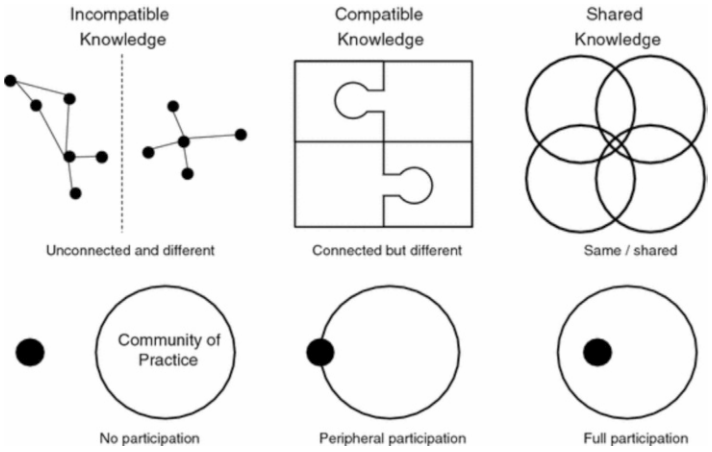

Figure 39. Shared and compatible concepts (From Walker, 2013)

it to appropriate prior knowledge and exploring any contextual familiarity that the student brings with them. Where student and academic's knowledge is shared then the perceptions of the stakeholders is likely to be aligned in a manner that facilitates participation and productive dialogue within a community of practice.

This raises questions about the relationship between the values underpinning the teaching, being aligned with the nature of feedback supplied and the complexity of the *work being* undertaken by the students. Is there a relationship between speed and complexity such that assessments requiring higher order thinking skills (evaluating, synthesising, theorising etc.) within a knowledge creation paradigm should receive feedback more slowly, whilst assessments that require simple factual recall within a students-as-consumers paradigm benefit from quick feedback? We also need to consider the 'distance' that students need to travel in order to gain the new insights that are being triggered through the content being presented. The literature says very little about this issue. An exception is the following comment by Hoffman et al. (2014: 39):

> In the literature on the learning of simple tasks, it was sometimes assumed that feedback is best when provided close in time to performance, but this is not necessarily the case. While immediate feedback may improve performance in the near term, it can also have the opposite effect on long-term performance. When learning a skill that is knowledge or reasoning-intensive, the learner benefits from having time to think back on their poor performance and cogitate on what was done right, what was done wrong, and what might be done differently in the future. Immediate outcome feedback can prevent such post-task metacognitive skills.

The speed that feedback is offered may, therefore, have implications for the way in which students react to it. If students do not have time sufficient to reflect upon their work, external commentary may not be well-received, or may be ignored.

RECIPIENCE

A few years ago, a colleague spoke to me of her frustration caused by marking and giving written feedback. After having spent several days marking over 100 essays and providing a page of written feedback on each, she was upset that only half of the students had bothered to collect their feedback sheets. Having received their grades electronically, collection of further critique (offering insights to how to improve their grade next time) was simply not on the student agenda. Her embittered conclusion was that '*if students don't want it, I won't waste my time writing it*'. This lack of a culture of 'recipience' is not unique to this one individual and other colleagues have moaned about student demanding feedback, but not really wanting to engage with it. Winstone et al. (2016) have explored the issue of recipience (Figure 40) and have identified a number of barriers:

1. Students have a poor awareness of what feedback means and what it is for. If students are not aware of the meaning of feedback and cannot 'decode' the academic language that is embedded in feedback then it rapidly becomes a useless exercise. I recall one master's level student a few years ago who, after a year of receiving feedback on her assignments, said to me, 'I have never really understood what you mean when you write things like "you need to be more critical in your analysis". Clearly all my 'well-considered' comments had been fairly meaningless to this particular student. The value of comments given also depends on the students 'mental models' of feedback and why they think teachers are providing it at all.
2. Students need to understand (be cognisant of) behaviours and strategies they could use to engage with feedback (such as proof reading each other's essays), and the opportunities that may exist for seeking further support, such as surgeries and drop-in sessions.
3. Students may feel disempowered when they have had prior experience of unsuccessfully implementing feedback and see little point in addressing the feedback given in one assessment for the next assessment that may be perceived as unconnected. This can also be related to the difficulties students have in translating the feedback into concrete action.
4. Students need to be ready to engage with feedback in order to make the most effective use of it. Where students lack the volition to scrutinise feedback, they may develop a more reactionary and defensive approach to comments made, in which the 'commitment to change' and develop their understanding does not register within the dialogue. The feedback is only related to learning that has already happened rather than to learning that is about to happen. Feedback and teaching then become two opposing rather than complementary activities.

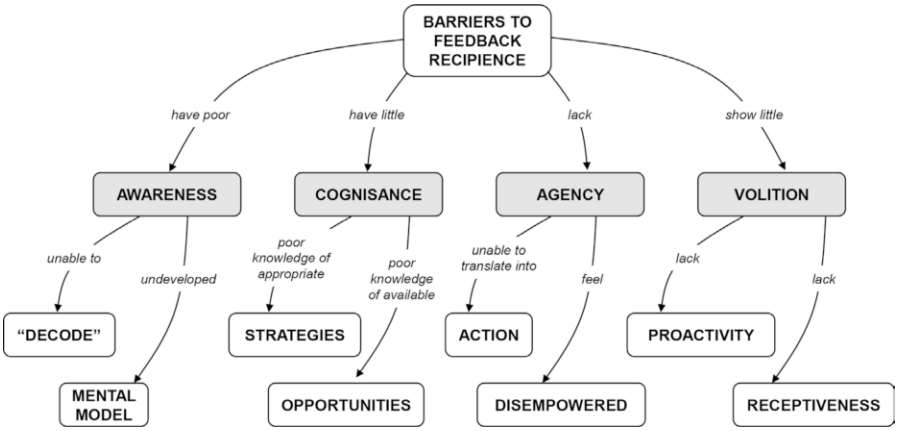

Figure 40. Four psychological processes that lead to a lack of feedback recipience (Based on Winstone et al., 2016)

Recipience to feedback is likely to be increased when students appreciate where the assignment under scrutiny fits into the wider structure of the subject. If feedback is not situated, then students will be discouraged from developing their proactivity and receptivity as they cannot see where this would take them. To expect students to be proactive in navigating a route in the absence of any direction or notion of where it might lead them may present an unrealistic expectation. Additionally, students benefit from feedback preparation activities that acknowledge the importance of students' emotions in formal feedback situations and may help to reduce student anxiety about the process (Värlander, 2008).

Winstone et al. (2016: 9) comment on the problems that stem from the modular arrangement of many degree courses where content and assignments in neighbouring modules are perceived by the students to be unrelated. This provides an additional barrier to engagement. In such instances the route through the module has already been navigated and so feedback on summative assessments may appear to the student as unnecessary.

IN CONCLUSION

As pointed out by Handley et al. (2011: 543), '*'Doing time' by complying with the norm of collecting, but then only skim-reading, feedback is a long way from the 'mindful' engagement associated with reflection, interpretation, deepening understanding and changes in later behaviour*'. Those authors argue that the literature's focus on feedback attributes that has attempted to isolate variables has been misplaced. This misdirection of effort has resulted in the relative neglect of student engagement with feedback. However, in exploring the idea of

'*readiness-to-engage*', Handley et al. (2011) have not considered the engagement with feedback to be part of the students' wider engagement with the disciplinary structure. This absence of structural appreciation is likely to reduce the potential for engagement as the students will not be able to locate the teachers' comments within the wider structure of the discipline. They need to know where this assessment fits in the map of the discipline and where this feedback will be directing them next. The notion of self-regulation (e.g. Williamson, 2015) is a difficult one to enact without adequate location in the disciplinary structure. Without a map of the disciplinary terrain, it will be difficult to generate a concept of active recipience among students.

In practical terms, generating sufficient capacity for widespread dialogic feedback probably requires greater investment in peer feedback (Nicol, 2010; Sadler, 2010). Rather than seeing this as a compromise, it better reflects the trend towards student-centredness in teaching and will help to align teaching and feedback processes. Parallel discussions about terminology ('feedback', 'feed-forward', 'peer-review' etc.) have also been a distraction from the evolution of effective learning dialogues, whether between peers or between teachers and students. The 'backwards' or 'forward' obsessions have maintained a linear view of the dialogue which aligns with dominant views of 'competence', but is at odds with the development of expertise and creativity that would be the products of powerful knowledge.

It is clear that we need to be able to discriminate between conceptions of feedback and how they relate to learning in terms of temporal sequencing along semantic waves, and structural compatibility with procedural and conceptual knowledge. The optimization of feedback cannot, therefore, be seen as a generic issue where a single feedback protocol will offer common utility across diverse curricula. Whilst there may be some sensible underpinning principles, the approach has to be context-sensitive.

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