

GOOD DESIGNS FOR WRITTEN FEEDBACK FOR STUDENTS

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There is no such thing as good teaching without good feedback. The teacher as knowledgeable expert gives feedback to students with the intention of scaffolding their learning. By scaffolding, I mean supporting and helping students reach higher levels of learning and achievement but without doing the work for them. Students value the feedback comments that instructors write on their assignments, especially when these comments help explain gaps in understanding, are supportive in tone and suggest ways of improving future work.

To get the best out of feedback comments, however, it is vital that students engage with them. No matter how much feedback the instructor delivers, students won't benefit unless they pay attention to it, process it and ultimately act on it. Just as students don't learn to play basketball just by listening to the coach, so they cannot learn to produce a better essay or solve problems just by reading teacher feedback. Effective feedback is a partnership: it requires actions by the student as well as the teacher. Indeed, while the quality of teacher comments is important, engagement with and use of those comments by students is equally important.

In higher education, it is usual to think about the instructor as the initiator and provider of feedback. However, this is not the whole story. Students frequently give each other feedback when tackling the same assignment (peer feedback). They also generate their own feedback while writing an essay or report: for example, they might consult a textbook to evaluate the accuracy of an argument or to identify gaps in a theoretical explanation. Significant learning benefits can be achieved when teachers harness peer feedback and build on these informal feedback processes (Nicol and Macfarlane-Dick, 2008).

It is also important that feedback is not too narrowly conceptualised as something that happens after the student has produced some work. Feedback is not always backward looking and a consequence of action. It can also be forward-looking. In project supervision the instructor provides advice about what might be done next, while the work is in progress and not just at the end. Also feedback does not occur in isolation, it is normally provided in relation to the assignment goals. When students understand and share these goals they are more receptive to the feedback they receive.

In the following sections I first provide a set of recommendations on how to improve the quality of teacher feedback comments. Then, consistent with a broader conception of the feedback process, I discuss ways of ensuring that these comments have maximum impact on learning. This involves creating structured opportunities for students to engage in feedback conversations with their teachers and with peers and to reflect on the meaning of feedback in relation to subject knowledge. In what follows, my assumption is that feedback is being generated in relation to a written assignment, for example, an essay or report, even though most of the discussion also applies to other feedback scenarios.

THE FORMULATION OF WRITTEN FEEDBACK COMMENTS

What are the features of good written teacher comments? The following is a set of recommendations for good practice. These are based on investigations of students' perceptions of what constitutes helpful feedback and on researchers' suggestions about how to translate these ideas into practice.

Research on feedback comments
<p>Written feedback should be:</p> <ul style="list-style-type: none">• Understandable: Expressed in a language that students will understand• Selective: Commenting on two or three things that the student can do something about.• Specific: Pointing to examples in the student's submission where the feedback applies• Timely: Provided in time to inform the next piece of work• Contextualized: Framed with reference to the learning outcomes and/or assessment criteria• Non-judgemental: Descriptive rather than evaluative, focused on learning goals not just performance goals.• Balanced: Pointing out the positive as well as areas in need of improvement.• Forward Looking: Suggesting how students might improve subsequent assignments• Transferable: Focused on processes, skills and self-regulatory abilities

Understandable, selective and specific

Overall, the research on feedback shows that students do value written comments on their work (e.g. Weaver, 2006). However, they also express concern when these comments are illegible, ambiguous (e.g. 'poor effort, could do better'), too abstract (e.g. 'lack of critical thinking'), too general or vague (e.g. 'you've got the important stuff') and too cryptic (e.g. 'why?'). Sometimes this is a question of language, at other times of detail. Much feedback uses a disciplinary discourse that is difficult for students, especially beginning students, to decode. The teacher can remedy this by trying to write comments in plain language and by providing an explanation where disciplinary or technical terms are used. It is also important to provide enough detail so that students understand what the guidance means. This has led to the suggestion that comments should be formulated as small lessons, and that these should be limited to two or three well-developed points for extended written assignments (Lunsford, 1997). It can help students if teachers also point to examples in the submission where the feedback applies rather than provide comments with no referent. For instance, highlight a positive feature, explain its merit, and suggest that the student do more of that (e.g. a good example of logical transitions or of a disciplinary argument).

Timely

Numerous studies show that students receive feedback too late to be helpful, due to their receiving it after the next assignment. Students are also quite vocal about this problem. At one level dealing with this issue is straightforward and might simply involve specifying turnaround times for grading and feedback on assignments: some institutions make a commitment to three week turnaround. However, the timeliness

dimension is also related to opportunities to use feedback and the requirement that students get feedback when they experience difficulty rather than wait too long.

Multi-stage assignments can address some of these problems. If the assignment allows drafting with feedback provided on the draft, students are more likely to see the feedback as timely and make good use of it. Alternatively, teachers might provide feedback on aspects of the work in progress (e.g. essay plans, introductions, a sample of the argument and supporting evidence) with the task sequenced with each stage building to a more complex final assignment. Providing feedback on drafts need not necessarily increase teacher time: teachers can limit the feedback that they provide when they grade the completed assignment or students might give each other feedback at intermediate stages. A further concern is that on a graded assignment it is important that the student actually does the work and that the teacher does not rewrite the assignment as part of the feedback. This requires careful consideration of the kinds of feedback comments teachers provide,

Non-judgemental and balanced

Teachers need to consider the motivational as well as the cognitive aspects of feedback. Feedback comments can be discouraging, lead to defensiveness or reduce confidence (e.g. 'no, that's all wrong, you really have not understood the literature'). Kluger and DeNisi (1996) found that 30% of comments were of this type. Much motivational research has focused on whether feedback comments direct students' attention towards learning or performance goals, that is, towards the mindset that mistakes are part of learning and that effort can enhance achievement or to the mindset that achievement depends on ability, which is more fixed (Dweck, 1999: Dweck, 2006).

Research in this area also suggests that teachers should try to ensure that students perceive comments as descriptive rather than evaluative or authoritarian. One approach is for the teacher to reflect back to the students the effects of the writing, in other words, how the teacher has interpreted what is written (e.g. 'here's what I see as your main point...'). This helps students see the difference between their intention and the effects that are produced. Some experts argue that faculty should start and end commenting on positive aspects of what the student has done, with a middle section focusing on those aspects in need of improvement. However, a word of caution is needed here: if the student perceives that praise is gratuitous or that it does not align with the grade awarded then this can be confusing or have a negative effect on motivation.

Feedback could also emphasise learning goals by acknowledging the role that mistakes and effort play in learning and by avoiding normative comparisons with other students. Some teachers have addressed such issues by providing encouragement in their comments (e.g. 'analysing a case is complex and can be very demanding but all students who put in the time and effort get there eventually'). This emphasises success and lets students know that they have the capacity to succeed. Acknowledging the role that mistakes play in learning when giving feedback is another useful tactic (e.g. 'this is a common misconception: when you identify the reason for this misconception you will have a good grasp of this topic').

Contextualized

Research suggests that feedback is more effective when it is related to the instructional context, that is, to the learning outcomes and the assessment criteria. Sadler (1989) defines feedback as information about the gap between what the student did (actual performance) and what was expected (the assignment outcomes), information that is intended to help the student close that gap. Hence, alignment of feedback to the instructional context is essential for learning. It also increases the likelihood that students will actually understand the feedback. Many teachers use feedback forms with assessment rubrics wherein feedback is written under or alongside the stated objectives or assessment criteria.

A related recommendation deriving from Sadler's definition is that students spend time at the beginning of an assignment actively unpacking what is required: for example, by translating criteria into their own words or by comparing samples of good and poor assignments submitted by classmates in earlier years so as to identify which is better and why. By enhancing their understanding of the requirements and criteria students are more likely to understand and use the feedback advice they receive. Glaser and Chi (1988) have also shown that the time experts spend constructing the initial representations of complex tasks partly accounts for their better performance when compared to novices.

Forward-looking and transferable

The most consistent request from students is that the feedback tells them about their strengths and weaknesses and specifically about what they need to do to make improvements in subsequent assignments. Knight (2006) calls the latter 'feedforward' rather than feedback. Examples might include suggesting goals to focus on in future assignments or specific strategies that might apply. Some feedback sheets include an 'action-point' box where the instructor can outline the specific actions that would lead to greatest improvement in the next assignment. Walker (2006) sees the focus as being on skills development rather than on specific content: developing the skills to solve problems or write essays in the discipline is more effective in the long run than solving a single problem or writing a specific essay. Another perspective is that comments should focus not on gaps in knowledge and understanding but on the students' representations of the knowledge in their discipline. Comments should help students find alternative ways of looking at the problem rather than simply highlight misunderstandings. The intention here is to promote new ways of thinking about concepts, their relationships and their applications.

Hattie and Timperley (2007) identified four orientations to the provision of feedback comments: teachers could provide comments on the task, stating where the assignment is correct or incorrect or requires more input; they might be about the writing process (e.g. 'this assignment could be better if you planned out the structure and sequence of arguments'); they might focus comments on the student's ability to self-regulate, for example, feedback on students' own assessments of their work would fall into this category (see below); or the comments might be personal (e.g. 'that's a sophisticated response, well done'). Hattie and Timperley maintain that focusing comments on the process and on self-regulatory activities is most effective, if the goal is to help students transfer learning to new contexts.

I have discussed encouraging students to use feedback earlier in relation to multi-stage assignments. However, here is an additional example, based on a variation of a strategy used by a colleague. Students are required to write an essay, let's say on ethics. The instructor provides written feedback, usually a few paragraphs, on the subject content, the ideas, arguments and evidence. Specifically, the feedback points to new ways of looking at the issues and refers briefly to other theorists. The students are then allowed to produce a second assignment in the same content area but using a different format (e.g. a report to the government on this ethics issue). Those who choose this option are told that to get a good grade in the second assignment they must go well beyond the ideas in the first assignment and demonstrate good use of the feedback. This is intended to encourage students to use the feedback, read more widely and to inter-relate and apply ideas from other sources in the report. Why is this design of interest? First, the students have a strong incentive to act on the feedback. Secondly, both the student and the teacher see the direct benefits of feedback in future action. Importantly, students do not repeat the same assignment so they will not perceive this as duplication nor will their teachers. This is a good example of the forward use of written comments.

FOSTERING FEEDBACK DIALOGUES

The advice on the formulation of comments above is a useful starting point in thinking about feedback. However, it does not really go far enough. Feedback is not a monologue. The meaning of feedback comments is not transmitted from the teacher to the student: rather, meaning comes into being through interaction and dialogue. So how might we enrich feedback and make it more meaningful to students?

Firstly, teachers must, as far as possible, tailor their feedback comments to students' needs. Students differ in their understanding and in their reactions to feedback so this is a challenge, especially with large classes. However, progress is possible by designing teacher-student interactions in ways that promote responsive and contingent feedback conversations. Secondly, teacher feedback must be supplemented by feedback from other sources. Students must be exposed to and interact with a greater variety of feedback responses. Multiple sources of feedback help students see their work from many perspectives and this enhances understanding and capability. The most readily available source of supplementary feedback derives from peers enrolled in the same course.

Thirdly, feedback must be geared to strengthening the students' ability to judge the quality of their own work. The long-term purpose of feedback is that students become independent of their teachers. Students already engage in inner dialogue and generate their own feedback when they produce an assignment. A systematic focus on strengthening these processes will not only make teacher and peer feedback more effective but it will also help develop your students' ability to monitor and evaluate their own learning. Lastly, we must try to create the conditions that will motivate students actively to seek and use feedback. This, however, is more likely to happen if we strive to meet the other three conditions. The following sections develop these ideas and suggest strategies for implementation.

MAKING TEACHER FEEDBACK CONTINGENT ON LEARNERS' NEEDS

Wood, Wood and Middleton (1978) in their work on contingent tutoring demonstrated that there is no ideal level of feedback from a teacher. What is optimal is continual dynamic adjustment of the level of teacher input depending on the degree of learner understanding. More iteration is not necessarily better, neither is more specificity or detail: the point is to match the feedback to each student's needs. Unfortunately this can be difficult to achieve when student numbers are large.

One way of making teacher feedback more sensitive to individual needs is to have students express a preference for the kinds of feedback they would like when they hand in an assignment. Teachers, for instance, might ask students to request feedback, to attach questions with their submission identifying areas with which they would like help: while some might be about the writing process others might concern concept understanding and use. The teacher would then focus the comments on these areas. Bloxham and Campbell (2008) tested this approach with first-year university students and found benefits although she found that some students had difficulty formulating high-level conceptual questions. However teachers can address this issue through better initial support for question formulation and/or by beginning with a collaborative essay task where groups of students work together to form questions. This procedure shifts the balance of responsibility for feedback towards the student. Requesting feedback based on their own concerns empowers students more than just receiving feedback based on the teacher's interpretation of weaknesses. However, this procedure need not stop teachers using feedback to highlight additional issues not identified by students.

Elbow and Sorcinelli provide a structured version of the requested feedback approach (this volume); they ask students to write an informal cover letter to hand in with an essay, but they provide the framework using specific questions: what was your main point?: what were your sub-points?: which parts of the submitted essay feel strong and weak?: what questions do you have for me as reader? The cover letter ensures that the students' comments form the beginning of a dialogue that is continued by the teacher through the feedback. They note that dialogue can extend further by having students respond to the teacher's feedback: for example, they might write a short note that tells what they heard in the comments and how they will use them. Importantly, when feedback comments are contingent on what the student does it is more likely that they will actually meet the criteria for good commenting I discussed earlier, that is, be understandable, selective, specific and even forward-looking.

Contingent dialogues could also start with teachers formulating their feedback as questions on students' work that are then followed through in face-to-face discussions, individually or in small group tutorials. A recent innovation is audio feedback. The teacher reads the student script and attaches audio files. Early reports suggest that students respond more positively to audio feedback, seeing it as closer to a dialogue. Teachers can produce reactions to the writing as they read, can ask questions and suggest improvements. Variations in tone and the naturalness of the approach seem to give students more of a sense that teachers are interested in what students have written. Teachers or students could also build on the dialogues prompted through audio feedback in class. Early research shows however that it can take time for some teachers to get used to this feedback format.

SUPPLEMENTING TEACHER FEEDBACK WITH PEER FEEDBACK

It is natural to think about feedback as if only teachers are able to provide it. Yet, many learning benefits derive from peer feedback: it is not just about saving time (Boud, Cohen and Sampson, 2001). It can be difficult for teachers to address all areas of weakness in students' work or to provide comments in an accessible language. Peers, however, who are tackling the same assignment, might be able to provide feedback in a student-centered discourse. Also, some students might actually be more receptive to teacher feedback if the comments they receive from peers agree with those from the teacher.

While consistency is important in marking and grading, this is less important in feedback. Indeed, there are significant benefits to be gained from variation. Having different readers respond to and comment on an assignment provides multiple perspectives and this invokes multiple opportunities for scaffolding. Seeing examples of the work of others and commenting on them also helps students become more objective and critical about their own work. When students respond to others' work and receive comments on their own work, this enhances their understanding of what quality looks like and how to produce it: they learn that quality does not come in a pre-defined form, rather there is a spectrum of possibilities.

Collaborative assignment production

There are many ways of implementing peer dialogue in relation to written assignments. Informally, it can be provided during the execution of a task by getting students to work together collaboratively to produce an assignment. This is the approach that one teacher adopted in a first-year psychology course with an enrolment of 560 students. He required his students, in groups of six or seven, to collaborate and write six short essays online over two semesters (Nicol, 2009). All the group discussions and the final submission were recorded within WebCT (now Blackboard), the institution's learning management system. Students remained in the same closed discussion group throughout the year with members of each group giving each other feedback while writing the essays and while negotiating and agreeing the final submission.

The teacher provided online guidance that emphasised the value of peer feedback for learning and that instructed students in good practice in peer feedback. The teacher supplemented this with feedback through essay exemplars and with general feedback to the whole class through an open discussion forum. The exemplars were selected from the students' submissions and posted online after all groups had submitted their assignment. The students were encouraged to compare their submissions against the range of exemplars. This approach proved highly motivational and a majority of the students (64%) agreed that the peer dialogue increased their understanding of the topics studied. There was a significant improvement in essay performance in the final exams compared to previous years. One notable feature of this design was that the instructor organised rich and motivational feedback for 560 students without the over-burdening himself with the provision of individual feedback to every student.

Peer commenting on assignments

A formal approach to peer feedback is to organize classroom sessions (or online opportunities) where students can critique each other's work. For example, students might write a short 500-word essay (e.g. 500 words) and bring three copies to a tutorial. The instructor distributes these across the tutorial group with the result that each student provides and receives three sets of peer feedback comments. Instructions might be: identify two weaknesses in the text and make recommendations for improvement or identify whether the evidence sufficiently supports the argument. In some scenarios the instructor might provide the assessment criteria or rubric for the comments whereas in others the students might derive the criteria during the act of assessing the work for peers. There are advantages in using both approaches.

Some students lack confidence in the ability or knowledge of peers. Hence they can show resistance to peer critiquing. This can be addressed through training and by linking peer to instructor feedback: for example, after peers have provided structured comments the instructor could provide her own comments not on the assignment but on the comments provided by peers. Software has been developed to support peer commenting which also makes it easy to implement this with large classes.

Learning through peer collaboration and review

Although the findings from research suggest that students improve their writing in the disciplines through practice and feedback, most teachers are overwhelmed by the workload associated with providing this feedback. Hence a different approach is required. The approach I advocate here is that students learn writing through reviewing (see also chapter on writing). In collaborative authorship and in peer commenting, students analyze each other's writing, detect problems in understanding and in the writing process and make suggestions for improvement. This is beneficial to all students but especially for those who might fail to detect their own misunderstandings or flaws in their writing as well as for those who might overestimate their own understandings and capabilities. This approach can also give students more practice in writing without significantly increasing instructor workload.

Importantly, peer feedback builds on teacher feedback. It further optimizes the adaptation of comments to individual student needs and it links comments directly to the production of a specific output. In effect, peer feedback helps ensure that comments meet the criteria presented earlier, that they are timely, forward-looking and actionable. Finally, when students engage in peer feedback activities, they are also put in the role of the assessor. This helps develop their ability to evaluate their own work.

ACTIVATING AND STRENGTHENING INNER FEEDBACK

When students engage in learning activities there is always a feedback dimension, even when there is no external source of feedback advice. For example, when writing an essay students usually generate a great deal of inner dialogue and feedback during the act of production (e.g. 'Have I expressed this clearly?' 'What if I tried it this way?'). This inner dialogue leads to tracking manoeuvres (re-workings of the text) that ensure a match between the student's goals and the finished essay. These inner or reflective dialogues are a natural consequence of engaging in any purposeful action.

Making these reflective dialogues more conscious and public offers many benefits. For instance, asking students to assess their own assignment either during its production or at the end before handing it in helps develop evaluative skills. These skills are important if students are to become less dependent on their teachers and more independent and autonomous. Also, if the products of these self-assessments are made public, teachers gain insight into how students think about their own work, which in turn enables them to better target their feedback.

It is also important to note that self-assessment is already embedded in students' use of teacher feedback (Black and Wiliam, 1998). When students receive teacher feedback, they must be able to use this information as a reference point to evaluate their own work: unless they do this, they will not be able to make subsequent improvements. However, through this evaluative process, students are in fact already engaging in acts of assessment not dissimilar to those carried out by their teachers when they produce feedback. So, as well as improving teacher feedback it might be more productive in the long term to focus some of our effort on developing the student's own evaluative capabilities.

Harnessing inner feedback: more frequent tasks

To help students develop their self-assessment skills it is important to provide them with many opportunities to reflect on their work: this is relatively easy to do, for example by replacing one large assignment at the end of a course with regular small assignments during the course. This gives students repeated occasions to benefit from feedback from their own evaluative activities: they will find out which concepts and ideas are difficult to express and where they have problems in writing. For some students this will be enough to trigger further study to clear up misunderstandings or even to seek out feedback from other students, which is also beneficial. And all this occurs without teacher feedback.

Support for the idea of regular and distributed assignments comes from the robust research finding about 'time on task'. This shows that the more time students spend studying in and out of class, the more they learn (Chickering and Gamson, 1987). This is not a consequence of practice alone: rather it is the result of the feedback students generate through that practice. The main drawback with numerous assignments is that teachers might feel they have to grade and provide feedback on them all. However, a small proportion of marks might be awarded for effort, for actually producing the assignment. And teacher feedback can be limited by using a simple rubric and/or by giving general feedback on a sample of these assignments to the whole class. Alternatively, peer feedback of the kind I described earlier might be appropriate.

Having students reflect on teacher-provided comments

Students might also reflect on and evaluate the relevance of the comments that teachers provide. When a teacher provides comments, each student normally receives them in relation to their assignment. However, many students report that such comments do not meet their needs: for example, they might not address areas where they suspect they are weak. From the teachers' perspective, providing individual comments to students is a high workload activity that has low-benefit if the student does not find the comments helpful. The instructor could however multiply the

benefits of comments if he collated all the comments for the same assignment and used them in new ways. A master list would suffice although some software now enables comments to be stored in and accessed from a databank. For example, students might be asked to select from the collated list the comments that they consider most relevant to their assignment and to say how they might act on them. This would encourage inner reflection both on the comments and on their own work. Importantly, the students rather than the teacher would be the protagonist in identifying the relevance of comments. Engaging with the comments that other students receive for the same assignment alerts students to pitfalls they may not have noticed, puts individual feedback comments in a wider context, engages students actively and helps them develop a better understanding of the assignment requirements.

Comments might be shared in many ways. The teacher might produce a printed summary ideally using an online environment, as this will give more flexibility for sharing. Importantly, this approach need not take more faculty time as the feedback comments produced in one year could be reused with new students in subsequent years, if the teacher set the same assignment. Taking this idea further, students could be encouraged to set up their own study groups where they meet and discuss their work and feedback comments. Some students are probably already doing this.

Strengthening self-assessment

It is also possible to structure assignments in ways that encourage formal self-assessments. Indeed, instructors can integrate such self-assessments into any course or assignment. Students might be required to make an evaluative judgement when they hand in an assignment (e.g. 'What did you do well? Give examples', 'Where do you think the assignment is weak?'). In a Pharmacy course in my own university, an assignment cover sheet was developed for essay self-assessment. The students were required to rephrase the essay question in their own words, make a judgement about whether they had met some stated criteria, estimate the grade they expected and provide a justification for this. Teachers then commented on these self-assessments. This approach not only encouraged students to stand back and evaluate their own essay but also provided the teacher with insights into how students' perceive and judge their own competence.

Self-assessment is even more powerful if the teacher asks students not only to judge their own work but also to formulate the criteria and standards that should apply. This often happens in later years in project classes but it could be brought forward to earlier years. Students might, for example, be invited to generate the criteria by which to assess an unfamiliar assignment (e.g. a blog, a wiki) and then to carry out their own self-assessment of progress. The rationale is to move students away from dependence on the judgement of others to a greater reliance on their own judgement. This will better prepare students for professional practice and for future learning.

IN CONCLUSION

This chapter has provided many ideas and practical approaches to improving the power of written feedback. Some of these have been about the quality of the written feedback message while many have been about improving students' interaction with and use of those messages. In this conclusion the essence of this advice is distilled

into three overarching guidelines. These are that instructors should ensure that feedback:

1. *Is expressed in learner actions.* Make sure that feedback actually feeds-forward into action rather than backwards. This is the most consistent recommendation from the research on written comments both from the point of view of students and of faculty. Perhaps the ideal feedback scenario in higher education is project supervision where the student has frequent meetings with the teacher to discuss and rework a developing assignment. If we could make large class feedback more like project supervision, feedback would have maximum impact.
2. *Is contingent on and responsive to student needs.* There is no right level of specificity or detail in feedback: it all depends on students' needs and your purpose in giving feedback. Contingency requires that students should have relevant and responsive feedback conversations with the teacher but equally with peers: this is necessary because the right level of specificity or detail cannot really be predicted in advance. It also means involving students actively in reflection on feedback and on their own work so that they are required to locate the contingency relationship not just the teacher.
3. *Is perceived by students as non-judgemental.* Feedback is about helping students succeed not about exercising power over them. This means setting high expectations that challenge students while always assuring them that they have the capacity to succeed. Most of what has been suggested, if appropriately implemented, would lead to positive engagement with feedback: that is, reader-response commenting (Lunsford, 1997), contingent feedback, self-assessment which gives students a sense of control over their learning and peer feedback which also fosters a sense of community.

The final word is about grading. Grading is often a concern given that many students focus more on their grades than on feedback comments. In this volume there is a chapter on grading and on motivation. However, the essential advice here is to ensure that grading does not have a negative impact on feedback processes. Simple approaches might work, for example, asking students to respond to comments before giving the grade or asking them to come to class to discuss the feedback before distributing their grades. However, this all boils down to motivation: if the recommendations in this chapter are followed then students will come to appreciate the value of feedback and how it helps them succeed in their learning.

Supplementary Reading

Nicol, D.J. and Macfarlane-Dick, D. 2006. Formative assessment and self-regulated learning: A model and seven principles of good feedback practice, *Studies in Higher Education*, 31(2),199-218.

Nicol, D. (2009). Transforming assessment and feedback: enhancing integration and empowerment in the first year, Published by the Quality Assurance Agency for Higher Education, available at:

http://www.enhancementthemes.ac.uk/documents/firstyear/First_Year_Transforming_Assess.pdf . Taking the perspective that the purpose of assessment and feedback is to help develop in students the ability to monitor, evaluate and regulate their own learning these two publications reinterpret and distil the research on feedback into a

set of principles that can be used to guide practice. Seven principles of good feedback practice are suggested in Nicol and Macfarlane-Dick (2006) and numerous practical applications are suggested. These feedback principles provide another way of interpreting and implementing the ideas presented in this chapter. Nicol, (2009) is a further development of the feedback principles but with a focus on first-year teaching. This publication includes a literature review, short definitions of each principle, a range of examples of their implementation and strategic guidelines for senior managers. All this material and more can be found on the REAP (Re-engineering Assessment Practices) website (www.reap.ac.uk). REAP was a project funded by the Scottish government (£1m). Its goal was to show how technology might be used to enhance assessment and feedback practices in large enrolment classes.

Black, P. & Wiliam, D. (1998) Assessment and classroom learning, *Assessment in Education*, 5(1), 7-74. Paul Black and Dylan Wiliam provide the most comprehensive review of formative assessment and feedback available. They analyze the results of over 250 selected studies across all levels of education. This is the starting point for those with a passionate and deep interest in this topic.

Bryan, C and K. Clegg, K. (2006). *Innovative Assessment in Higher Education*, London: Routledge. This book provides an up-to-date overview of thinking and research on formative assessment. It is grounded in the idea that assessment is *for* learning and that students should be active partners in assessment. The first part of the book provides frameworks for thinking about assessment and feedback while the second provides examples of innovative practice.

Grant Wiggins (1991) *Educative Assessment*. This is the best example of US practice in this area. Although the book has a school perspective its title 'Educative Assessment' highlights the idea of assessment *for* learning rather than just assessment *of* learning. The focus is on designing assessments to inform and improve student performance.

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