John Cowan's assessment examples for Civil Engineering

Example JC1 (also an example in Social Sciences)

Establishing the viability and potential of formative peer-judgements

When: Undergraduate, first year

Purpose: To establish the making of formative peer-judgements as a feasible and worthwhile activity, through an early and successful experience of the process.

Outline: (NB: Used in conjunction with an early, demanding, open-ended assignment, with each individual student's submitted response being independent.)

1. Invite students to bring a completed draft to a "co-operative activity"; no draft, no admission!
2. Pass drafts to peers who (preferably) do not identify the writer;
3. Indicate in general terms how to identify scope for improvement, and what type of suggestion might be helpful to the writer. Show students by example how to generate constructive suggestions for improvement by the individual writer;
4. Return drafts with the peer's written suggestions;
5. Encourage original writers to consider suggestions thoughtfully;
6. Leave writers free to revise drafts as they wish, before submission for marking by the tutor.

Expected outcomes:

1. Writers will see scope and means for improvement in their own drafts, mainly through their (guided) commenting upon the work of peers.
2. The notion that evaluative judgements normally feature multiple headings will have been encountered.
3. The formative value of peer assessment will have been established
4. Over 90% return to subsequent *voluntary* activities of this type.

Comments:

1. It paves the way for pedagogically effective, and cost-effective use of formative peer-assessment throughout the programme.
2. The commonest comment (often made) comes as drafts are being passed back. "I don't need to see what suggestions are being offered to me. I have already seen how to make improvements in this effort of mine by looking at what others have done, and seeing how they can improve."
3. [The students learn] Active engagement, giving and receiving feedback, modelling and practice, working with peers, developing learning and judgement.
4. The activity is so general that, provided the assignment is open-ended (each student should have an individual response) it can be used without adaptation, in any discipline or level.
5. Emphasise, and model, that the only feedback to be offered is feedforward, with helpful suggestions which can be taken up by the writer, without brain surgery or much extra effort.

Example JC2 (also an example in Social Sciences)

Specifying and using criteria for evaluative judgements

When: Usually undergraduate year 1, but have used in year 2, and in early stages of [part-time] postgraduate provision

Purpose: To introduce students to the need for objective formulation and use of criteria, in order to reach sound decisions, about anything, including own work and work of peers.

Outline:

1. Time this activity to occur late in the history of an early assignment which has entailed searching on the web for sources;
2. Schedule a workshop on "The making of evaluative judgements".
3. Form small groups and ask them to prepare to choose one of six optional prizes in a holiday competition. They will be asked to predict which option will be selected by one of their number, (perhaps Mr X?), according to *his* holiday preferences;
4. The group extracts from Mr X his priorities and his methodology for choosing;
5. The prizes are revealed. The group try to predict Mr X's choice without his assistance, while he decides, privately;
6. Methods and outcomes are compared, usually with light-hearted banter regarding the discrepancies or disagreements within groups;
7. The process is repeated, now with a car prize to be chosen by Ms Y;
8. The tutor facilitates a plenary discussion: "What have we learnt about identifying and using criteria to make a choice?"
9. Now all refer to the current course-related task which has involved finding and using citations by searching on the internet. Groups are charged to help members to devise criteria and methodology for judging the worth of two of their chosen citations. That judgement is to form part of the imminent assignment task.

Expected outcomes:

1. The expected outcome is a grasp of the main elements of the process of making evaluative judgements leading to a single decision when using multiple criteria. The tutor should highlight emerging points as the activity proceeds.

Comments:

1. The class time allocated to this activity will undoubtedly have been precious. If the activity has been well facilitated, it will transpire to have been used with good effect in an initially somewhat detached, enjoyable and effective activity. For this engagement with the basics tends to make an effective and enduring impact, and is often so recalled by the students.
2. The commonest comments are e-mail messages to the effect that the student wishes to make changes to their submission for the forthcoming assignment, as they see where it can be improved. "Is that OK?" Of course it is OK, as any student can improve any draft before submission. Also forthcoming in the long term are feedback messages to the effect that they have started judging their draft work formatively, according to the same rationale.
3. Active engagement, modelling and practice, working with peers, developing learning and judgement – and to some extent students contributing to formulating and applying criteria for formative self-assessment of work in progress.
4. Although the example described is the *simplest* variant, as the parallel with choosing sources is straightforward, I have most commonly used this with a forthcoming open ended assignment, for whose evaluation the class should try to formulate criteria before dispersing.
5. Make it fun, but never lose sight of the real priority in the facilitation of the event. Pinpoint general lessons, as these emerge from student comments. Perhaps keep a flipchart sheet or screen display which the facilitator updates with "Words of class wisdom."

Example JC3

Matching performance to declared evaluative criteria

When: Undergraduate (any year); postgraduate

Purpose: Introducing self-assessment, by engaging each student in objectively and formatively evaluating their own performance against familiar criteria, which have previously been applied to similar work, but in that case by a tutor.

Outline

1. Base the activity on a current task, such as a discursive essay in social sciences, a first year engineering project or a reflective analysis of a recent critical incident on a placement;
2. On completing the task, offer students a podcast guiding them to evaluate their work, and identify constructive suggestions, as feedforward to themselves;
3. Students should now assemble their self-judgement. This should include the data on which it was based, the criteria against which that was judged, and their consequent evaluative judgements;
4. Marking tutors should act at this stage as auditors, rather than assessors. They should quickly check the self-judgements, and return them without their own judgements, and with comments only when the judgement has overlooked something significant in the process, or appears unjustifiably generous – or harsh.

Expected outcomes:

1. The common outcome is that each student will have identified personally-related data, and matched it to personally determined multiple criteria, in an objective process.

Comments:

1. The subsequent impact on the students' further development as a person capable of objective self-judgement should be strengthened by the delegation here of responsibility for the making of judgement, the formative impact of the feedback and feedforward, and the lack of emphasis on the mark or grade to be awarded.
2. Initial reactions are often that it is the teachers' job to do the marking. Slowly it begins to emerge that students are formulating a better impression of what is expected of them, and the aspects of their work which contribute to the desired judgement, and so can direct their efforts to better effect.
3. [The students are learning] Active engagement, modelling and practice, developing learning and judgement
4. [Regarding self-assessment] I have always believed and practiced that the student's judgement must stand without challenge by the teacher. I have found that there is the occasional student who tests the system, and awards them self a ridiculously high grade. If that goes unchallenged, I have not found the same student over-judging on the second occasion. I have also found it useful to use a notice board to poster simply "Interesting examples of assignments and self-evaluation", with a few good ones, and the ridiculous one. The person concerned soon sees the comparison.

Example JC4 (also an example in Social Sciences)

Self-assessment facilitated by evaluative peer-comments

When: Undergraduate (first and third years) and postgraduate

Purpose: To benchmark standards in self- and peer judgements, through the facilitative influence of peer-evaluation of higher level abilities.

This can best occur in a setting featuring personal development planning, or creative effort (design, problem-solving, or group work), and the claiming of consequent developments. For in such cases it is often only the students themselves who have access to primary data (such as their creativity or contributions to the group), which they may tend to rate without objectivity.

Outline:

1. Ask each student to identify three commendable examples of their *use* of relevant capabilities during the module or group work. Then ask them to amplify these choices with supportive descriptions of the context and data, and a brief explanation of why they regard their chosen examples as commendable;
2. Peers (preferably arranged by the students) make and report their own formative evaluations of the sets of examples tabled by another student, based only on the writer's descriptions, implicit criteria, and supportive data;
3. Peers only then have access to the writer's self-evaluations, and offer their comments thereon;
4. It is left to student claimants to reflect freely upon their peer's comments, with a view to their revision of claims for development to date, and possibly their planning and subsequent evaluation of their further development.

Expected outcomes:

1. Generally the outcome is reassurance for some, or a challenge to be more self-satisfied for others, or a challenge to be more demanding for yet others.
2. Benchmarking of standards is difficult to confirm, but volunteered student feedback suggests that it can occur, with rich impact, for at least some.

Comments:

1. Marks were not so much allocated for the task (self-assessing), as for the outcome (the self-assessment).
2. It is a valuable step on the journey to self-reliant and objective self-managed lifelong learning.
3. Initial reactions indicate apprehension about the level of demand, and hence even rejection of the validity of the task. Provided these affective needs receive attention, students quickly develop confidence and objectivity, and will soon simply talk about the activity as if it is the natural way to tackle the assessment of generic abilities.
4. Active engagement, giving and receiving feedback, working with peers, developing judgement.
5. It is possible (and probably desirable) on a second encounter with this format to get students to define their ability level at the beginning of the appropriate module, and then base their assessment claims on *development* from that starting point.
6. Students may not be clear what is expected of them. I find it useful to avoid telling them what they should do, but rather to provide an example, perhaps fabricated, from another discipline area of a claim which they can nonetheless understand, and ask them "Please do that, for your own case".
7. It is declaring the programmes commitment to generic abilities of value, to self-judgement, and to the powerful socio-constructivist impact of engagement with peers.

Example JC6 (also an example in Business)

Bridging towards self-directed, self-managed and self-evaluated learning

When: Undergraduate (first and penultimate years), postgraduate.

Purpose: To prepare learners to sustain their self-directed learning self-reliantly beyond the course experience. Ideally, this activity should be part of an individual or group project within a subject module, with aims (and assessment) which include *both* content mastery and the development of relevant higher level cognitive and interpersonal abilities;

Outline

1. Locate this activity in a module in which part of the goals features worthwhile self-directed development of higher level cognitive and interpersonal abilities.
2. Each student selects personal learning outcomes, and specifies them in SMART form;
3. Each student plans rigorously for these desired developments. They should specify criteria for monitoring, and for eventual evaluative judgements in accordance with their declared goals;
4. Each student should take and consider constructive comments from a peer upon their plan and chosen criteria, without obligation to discuss these comments or resolve differences;
5. Each student regularly reports progress to a fresh peer, and similarly considers constructive comments from them;
6. Each student prepares their final claim and self-judgement of their development, with a note of peers' comments;
7. The student's self-assessment should set out and use declared and valid criteria, describe performance accordingly, report consideration of peer comments, and reach a (personal) judgement based on objective comparison of these. Provided it does so, it is accepted and used by the institution.

Expected outcomes:

1. The outcome has been achievements by students to a standard which a professional validating body agreed to accredit – after the event!
2. In the case of Business Studies, the outcome has in effect been keen approval and encouragement from the professional body.

Comments:

1. It facilitates and demands self-directed, self-managed and self-assessed development as an apprenticeship in lifelong learning.
2. Student comments tend to be highly individual and personal. Volunteered feedback, often many years after the experience, includes: (a) Accounts of continuing practice, and successes arising from it; (b) Powerful objective evidence of striking professional successes arising from development and use of abilities; (c) High levels of personal satisfaction, arising from a worthwhile (and initially daunting) task well done.
3. [Students learn] Active engagement, giving and receiving feedback, working to some extent with peers, authentic and investigative activities, especially when active experimentation is being tested out, developing abilities and judgement, students designing and managing own assessment.
4. The personal development tutor must be facilitative, but not judgemental, nor authoritarian. Students' goals and standards should be treated with full unconditional positive regard and empathy. Trust, both ways, should develop. All in the learning community (including the tutor) must expect to learn from others, and should enthuse when worthwhile learning does ensue.
5. It's partly described, in an earlier version, in Boud's book on Self-Assessment. It also features in Francis, H. and Cowan, J. 2008. Fostering an action-reflection dynamic amongst student practitioners. *Journal of European Industrial Training*, 32, 5: 336-346.

Example JC7 (also an example in Social Sciences)

Clarifying and creating criteria

When: Undergraduate, early first year mainly, or later if a type of task is entirely new

Purpose: Greater appreciation of dealing with multiple criteria.

Outline:

1. Advise the class in general terms of the next assignment task;
2. Ask groups to make 'shopping lists' of questions they would like to ask of helpful advisors, regarding what should feature in a well-rated assignment;
3. Form cross-groups. Allocate each to a different advisor from whom to seek advice. The advisor may be a second year student, a final year student, an employer, a graduate, or another lecturer;
4. When students return from cross-groups, they should pool and reconcile their findings. Then arrange for the class to snowball a general list of criteria and weightings.
5. Marking tutors should seek clarification, if they need to do it, so that they can mark accordingly, to the class's criteria.

Expected outcomes:

1. Expect the criteria which emerge to be much as would have been chosen by the marking tutors. But probably some will have used somewhat different wording. However, the fact that evaluation often entails multiple criteria, the combination of which it is difficult to arrange in assessment, will have been usefully highlighted.
2. Students will have gained a real understanding of the criteria – to which they will be committed, as their own creation.

Comments:

1. The task was facilitative of students' preparation for assessment. The item in question was being assessed, though.
2. It encourages students to think about desired outcomes in terms of standards and criteria.
3. "I'm as lot clearer now" Stop/Start/Continue feedback, and focus groups, strongly commend this activity for its usefulness, in communicating criteria in understandable terms – although seldom is the word "criteria" used by students in this connection. They talk more colloquially, about what is expected of them.
4. [Students learn] Active engagement, investigative activity.
5. Insist, firmly but politely, that there is no mention or discussion of the particular, imminent task.

Example JC8

Matching performance to evaluative criteria

When: Undergraduate, usually first year.

Purpose: To engage students in objectively comparing performance with provided criteria and a suggested method

Outline:

1. Relate this activity to a current practical task, which can be assessed on completion;
2. Provide students with a podcast which will guide them through the process of evaluating their work, on completion of the task. The evaluation should comprise an accumulation of both encouraging and critical comments;
3. Require students to summarise the provided criteria in their self-judgement, the data on which it was based, and their consequent evaluative judgement;
4. Check judgements as quickly as possible, and return with comments only when the judgement has overlooked something significant, or is generous – or harsh. Otherwise simply endorse the self-judgement.

Expected outcomes:

1. A relevant and useful experience of identifying data, and matching it to multiple criteria as an objective process.
2. Impact on students' development, strengthened by the reassurance from endorsement of the self-judgement, if soundly made.

Comments:

1. It takes students on the first step to self-assessment, by facilitating them to make judgements of their own performance. It also has the pedagogical advantage of swift feedback, and its consequent impact.
2. Wholeheartedly endorsed because they got feedback almost as soon as the task was completed, and being involved in assessing drove the points for attention home to them.
3. [Students learn] Active engagement, giving and receiving feedback to self, developing judgement.
4. It's a general activity, applicable to a variety of student tasks. [It] could be extended to other than practical work – provided the tutor can advise the students about how to assess.
5. Instructions for self-marking which are clear and free from ambiguity and points which raise doubts. Preparedness to encounter and deal with the occasional student who starkly over or under marks, for a variety of reason.

Example JC9 (also an example in Social Sciences)

Evaluatively identifying needs for early remedial tuition

When: Usually the first year of a course, undergraduate or postgraduate, especially in the latter case with international students.

Purpose: To identify and assist those whose grasp of the process of objective self-assessment offers significant scope for improvement, as a means to self-improvement?

Outline:

1. Centre this activity on any current demand for submitted work;
2. Require students to provide their own self-assessment of their submission. They should declare a mark or grade, and set out a brief explanation of how they reached it, mentioning what they see as the strengths and weaknesses of which they have taken account in their judgement;
3. Charge personal development tutors to sincerely and credibly (and briefly!) endorse those judgements with whose marking they can identify; they should arrange to discuss with those students (usually only a few) whose self-judging gives cause for concern – either through inability to self-appraise, or because of the identified weaknesses.

Expected outcomes:

1. Usually this unearths (as well as weaknesses requiring tutorial attention) some important misunderstandings in the understanding of the evaluative process or in applying criteria, or mistaken attitudes. These can generally be rectified, or at least receive attention.

Comments:

1. No marks for the task. Marks were awarded for the activity with which this task was associated.
2. [Tutors assist] by benchmarking standards for self-appraisal, and by encouraging declaration of weaknesses.
3. A mixture of reactions. Some students dislike attention being given to their weaknesses. Others welcome action which leads to remedial tuition. To a great extent, the success or failure of this activity depends on the extent to which the approach of the tutor is, or is not, supportive.
4. [Students learn] Investigative activities, giving feedback, developing judgement.
5. The activity should be supportive, confidential, non-judgemental, and effective. Big demands, but when it is possible, the outcomes for the threatened students can be marked.

Example JC10 (also an example in Social Sciences and Business)

Complete evaluation of a programme experience

When: Used in undergraduate year 1 (whole year), years 2 and 3 (one module), and postgraduate

Purpose: Providing and using a complete experience of the making of an evaluative judgement, which involves distinguishing between formative and summative evaluation.

Outline:

1. In the opening weeks of the programme, students should each compile a private 'Prior', in which they set out their hopes for the learning experience;
2. At the end of the programme, each student (not necessarily in accordance with the re-visited Prior) should specify the criteria by which they now evaluate their learning experience;
3. Students then apply their criteria to formulate a summative evaluation and judgement based on ingathered data; and a formative evaluation which identifies need, scope, suggestions and methods for feasible improvement.
4. Students should be involved in assembling and analysing the data, and formulating the occlusions to be drawn from it.

Expected outcome:

1. Comparative appreciation of and involvement in the processes of formative and summative evaluation *per se*, without its being directly related to the students' own work.

Comments:

1. It entails, in an activity which is ostensibly programme evaluation, a meaningful engagement with both formative and summative evaluative judgements.
2. Positive reactions, provided they were told that attention would be given to the evaluative judgements, and action taken for the benefit of the next cohort – and were shown, speedily, that this was happening.
3. [Students learn] Active engagement, giving and receiving feedback, working with peers, authentic and investigative activities, developing ability for making judgements, almost design of assessment (of a programme).
4. I find it more meaningful for all concerned to run an activity like this at roughly the half way stage in a programme, to identify improvements which can and should (and will) be made for the benefit of the current cohort.
5. Active engagement on the part of the students; genuine valuing of the outcome by staff.