

**15 days that changed the world:
Getting students to appreciate feedback within tight marking deadlines**

Separating grading from feedback

The question of feedback and students appreciation of it (or not) is a perennial problem. We have to get marks and feedback to students within 15 days for submission, including moderation and office time. If we are not careful, shortcuts will be taken resulting a reduction in feedback quality, so that far from improving feedback student perception and use of feedback, the 15 day turnaround may make the situation worse. However, there is a potential solution; school teachers do not provide summative and formative feedback altogether at the end of an assessment project. Rather a series of formative exercises develop understanding and necessary skills prior to the summative assessment. The final piece of work is graded and marks returned, often without any additional feedback.

I run a second year plant module, Bio237, in which the in-course assessment consists of a formal scientific write up of a practical project. There are 80 students on this module; I decided that there was no way I can mark 80 scripts and return them with meaningful individual feedback within the 15 day requirement. So in this session I took a lead from our teaching colleagues and separated the formative training from the final summative assessment. I reckon I could grade 80 scripts, without any individual feedback in 15 days.

But will students view the absence of feedback at the end negatively? Absence of individual feedback when the mark is returned does not mean absence of feedback altogether. Instead, feedback is provided in advance in formative sessions to help students improve their performance. This advance training allows students to reflect on the feedback they get as the module progresses. The training for the assessment comes from two sources, 1) assessment and experience in previous modules (e.g. reflection on previous feedback) and 2) direct training in the current module.

Formative training for the practical write up (Appendix 1)

The first piece of feedback the students were expected to reflect on and use in the current assessment was the comments and experience they received in their first year group practical. This assessment consisted of a write up of their experimental data in a short 'proforma' format that mirrored some of the components of a full scientific write up. Thus students had already had experience of writing the bones of the required structure.

A detailed set of criteria were presented to the students before the experimental work for this second year module had started. Thus the students were aware in advance of the purpose, direction and expected outcomes of the practical component of this module. Once practical work was complete, a series of face to face workshops and online sessions developed the skills they would need in the final summative assessment. An exemplar paper on a different topic from the practical activities was provided to illustrate best practice. Students looked at real abstracts and identified the components of these. They

then wrote an abstract of the exemplar paper. They got feedback on this through peer marking of these abstracts. Finally, an abstract of the exemplar paper was provided.

Students had received training and experience of plotting graphs in first year modules; they were reminded of this and that they still had access to this material. A drop in session on plotting with Excel was also held within the current module in case anyone wanted to brush up these skills.

A marking session was held where students marked a set of exemplar write ups. These were subsequently put on Canvas with an oral commentary, indicating the good points and where the work could have been improved. Finally, the students were provided with a set of detailed marking codes that had been compiled from generic feedback on the same exercise over previous years. Students were encouraged to use these codes to critically mark drafts of their own work before final submission.

Before the students were sent off to use all this feedback and produce the final write up, each group was required to submit a one page proforma detailing the title, objectives, methods, results (including a graph) and the main conclusions. The objectives of this part of the exercise was twofold: firstly to ensure all the members of the group were aware of the data they had collected and secondly to emphasise the formal structure of the paper before writing would begin in earnest. A formative MCQ test on the knowledge base of all 4 practical was held to make sure they were aware of all the information need for their own project.

To emphasise the marking criteria, rubrics for each sub-component of the paper (e.g. title, abstract, introduction, graphs *etc.*) were set up on Canvas SpeedGrader. These rubrics reinforced the criteria encapsulated in the marking codes document that had previously been circulated.

Marking on SpeedGrader

Once the submission deadline passed it was time to sit down and mark, or should I say grade, the write ups. This for me was one of the key points of this approach and the rationale was that grading would be quick, in contrast to providing the individual feedback. Once I started it was clear that I could grade quickly, taking about 10 minutes per paper, whereas it would have been double or even treble that if I had had to justify the mark for each section with individual feedback. So for 80 scripts I took a total of just over 13 hours to grade, whereas if I had also provided individual feedback this would have been over 40h. I finished the grading in 6 days. Another member of staff moderated the required 10% of the papers online in a further 24 hours.

Marks analysis and feedback to students

Thanks to Rob Jones in the e-learning team I was able to download an Excel file of all the student marks divided into scores for each of the individual sub-components. This was used as the basis of a mail merge (Appendix 2) where each student was emailed their scores breakdown and ranking along with some generic feedback compiled while marking. I also

tweeted using the module hashtag #Bio237 that the marks had been released and emphasised how quickly after the submission deadline in this was:

[#bio237 @UoBbiosciences](#) *practical write up marked & moderated. Check email for mark break down. Hand in was 14th Jan, marks back in 7 days...*

Student reception of the marks and feedback

Less than 30 minutes after the email went out a student emailed back asking for a personal meeting to get more personal feedback. I replied positively but worried that this may be the beginning of the avalanche that would completely undermine this approach: if students didn't recognise and use the formative feedback then time consuming individual feedback would be the only way. Two more emails came in, both with specific questions about a sub-component of the marks. I replied to these and include further examples of best practice taken from other submissions. This did not take me long and both students were (apparently) satisfied.

It's difficult to get any feedback on this assessment strategy since Module Evaluations are completed before module assessment has taken place. However I was heartened by a couple of Tweets that came following the release of the marks in from students who had taken the module:

[@DrJPritchard @UoBbiosciences](#) *unbelievably quick turnaround with mark break down and detailed feedback, how did you do it?*

And my favourite:

[@DrJPritchard @UoBbiosciences](#) *LEGEND*

I also undertook a retrospective quiz which shadowed the questions in the MEQ asking the students for their view on the process now they had received the marks. The numerical scores were good, with high positive scores that were generally higher than the scores for the equivalent questions in the whole module evaluation undertaken before students had submitted (Appendix 3). Indeed the question *'I had access to materials (e.g. online material criteria, exemplars etc) that helped me prepare for the write up'* had a score of 4.9 ('Strongly agree'). The question *'I received marks and feedback in time to help me improve subsequent assessments'* got a score of 4.7. The free text comments showed a divergence of opinion, some students clearly got the point of the process:

'the sessions we had on the write up allowed me to consolidate the learning in the labs and understand what I needed to write'

'Knowing the assessed criteria was extremely helpful in producing the write up as gave me more confidence in the standard of the work I submitted'

'Rapid feedback also very good as the sooner you can identify areas to improve when doing scientific writing the better!'

'..guidance and information given prior to the write up submission was very helpfula great opportunity to practice and gain feedback before writing our specific experimental versions.'

" marks were returned to us extremely quickly which was much appreciated as this work provided a good guide on progress in scientific writing and could be used to benefit other assignments and modules.'

'Abstract session and practice abstract was brill- I had never written an abstract before so the feedback received and the chance to read others abstracts was very helpful'

However some were less positive, not recognising the value of the feedback provided in the advance workshops:

To me, getting at least some personalised feedback on the final submission is significantly more important than receiving my mark within the week.

and

being given the various feedback codes and then them not being used at all was a bit weird.

Apparently these students did not understand the rationale of the process. The second comment suggests that this student is relatively passive and is not able to reflect, despite the clear training provided in this module.

However, the generally positive scores and comments suggest that the approach has been successful. Anecdotal conversations with students also identified an unintended consequence. I had provided a marks breakdown for reach of the individual components rather than a single mark (Appendix 3). From questions I got from the students after release of the marks it was clear that they see these marks as feedback, not something I expected. Reflective students were able to identify where they were not performing and use the material provided to identify where they would improve next time. A couple of students came to me for clarification, but this was not about why their mark overall mark was low but focussed on a specific part of the assessment where the component mark was poor. Thus even these students were developing reflective skills in within the framework provided. This process could be taken further in subsequent iterations by including an additional requirement of a post mark reflective piece by each student.

Final reflections

The strategy to separate grading from feedback seems to have been successful. Marking and return of marks was within the 15 days. The initial student reaction was positive and the

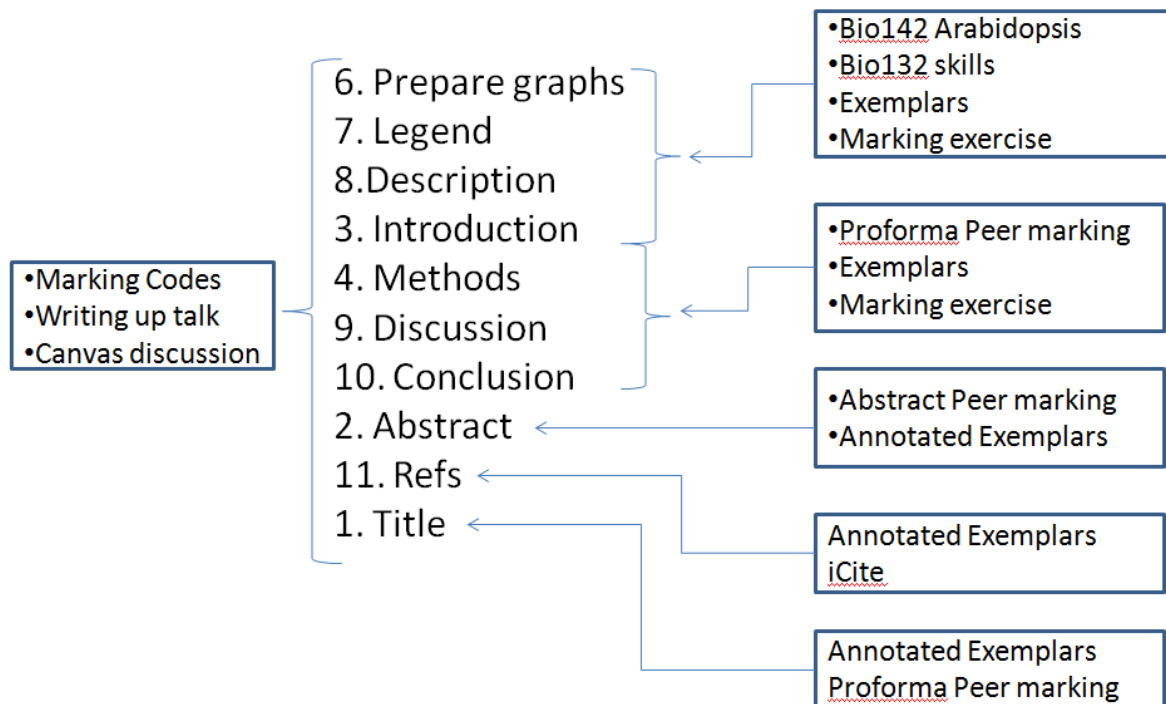
overall quality of the work was good. While some students have got in touch to question their mark and required more individualised feedback, these have not been many and the questions have been specific and easy to deal with. The strategy is more efficient than writing reams of feedback that is repetitive and largely unread. It has been observed that students only use feedback if their mark doesn't match their expectations which might explain this pattern of use. It may also be that students see the individual marks breakdown as individual feedback, this is potentially a problem as without any reflection these students may not be able to take lessons from this exercise and remain assessment driven.

Despite the apparent success this final student comment leaves me slightly exasperated!

'Impressed with the fast turn around of marks, however as they were returned in 1 week, why not utilise the other 2 weeks available to provide some personal feedback/comments as well?'

Appendix 1 – Sources of feedback/feed forward provided during and after the Bio237 module.

Sources of feedback



Appendix 2 Mailmerge individualised generic feedback providing grades only with no personalised individual feedback. Sent to students 21st January

Dear Jeremy

Here are the marks for your Bio237 practical write up you submitted on the 14th January. You got 100% overall which ranked you at 0 in the class of 76. The average mark was 71.1%, highest mark was 86% and the lowest 57.5%.

I thought they were all very professionally produced and you have clearly developed your skills in this important area of scientific writing. You received much formative training during the development of this write up and as flagged up at the outset there was no intention to give you further individual feedback once the marks are released. However, below I provide a breakdown of your marks for each section and some generic feedback I compiled while marking. I hope you find this helpful and that you are able to use all the feedback (and feed forward) provided to identify where you may be able to further improve next time you have to do an exercise like this. These formal reports are common in scientific journals and I hope the feedback and experience you gained doing this project will help you in reading and analysing scientific papers and in writing your projects, both of which are important parts of the final year.

Best regards

Jeremy

- **The score for titles was out of 5, you scored 5 or (100 %). The class average was 73.7%:** Titles were generally good. The best were specific questions or statements without being over elaborate.
- **The score for Abstracts was out of 20, you scored 5 or (100 %). The class average was 73.5%:** Abstracts were professionally done some had references or omitted the wider contexts which is not usual.
- **The score for Introduction was out of 10, you scored 10 or (100 %). The class average was 73.4%:** Good introductions had three or four paragraphs that started general and focused in on the specifics of the experiment. Good ones had some appropriate physiological of the background physiology and were well referenced.
- **The score for methods was out of 5, you scored 5 or (100 %). The class average was 72.1%:** Methods: some of these were over long, good ones were short and to the point and referenced the practical manual. There is no need to show equations for statistical calculation.
- **The score for Results description was out of 5, you scored 5 or (100 %). The class average was 71.5%:** Good Results descriptions were in the past tense, not in the first person and included examples of data and reference to some statistical analysis.
- **The score for Graphs was out of 10, you scored 10 or (100 %). The class average was 70.1%:** Some graphs were inappropriate in terms of colour use and scale

expansion. Occasionally tables were used instead of graphs or scatter plots instead of histograms.

- **The score for figure legend out of 10, you scored 100 or (100 %). The class average was 69.9%:** Good figure legends contained information on replicated and treatments with some reference to statistics without being over descriptive.
- **The score for discussion was out of 20, you scored 20 or (100 %). The class average was 71.9%:** The best discussions summarised the results and then integrated them critically with the literature and paradigms mentioned in the introduction. There would be some mention of the ecophysiology of the plant or mechanism discussed. Future work was usefully suggested.
- **The score for Conclusions was out of 5, you scored 5 or (100 %). The class average was 64.1%:** Good conclusions were short and to the point and avoided explaining how the experiment could be improved (this should be in the discussion) and should not include extra discussion.
- **The score for References was out of 10, you scored 10 or (100 %). The class average was 70.4%:** References should have included some primary papers and been in the correct format in the list and in the text, there is no need to put in authors initials in the body text.

Appendix 3: Post assessment quiz

This quiz was posted a week after the assessment had been returned to the students. The figures in brackets are the average score for the related questions in the MEQ that was completed before the practical write-up hand-in and return of marks. Students would have undertaken the training workshops at this point but not have started the writing up.

Question	Score 5 = strongly agree, 1 = strongly disagree
I found the teaching methods used in the practicals were effective in helping me learn	4.3 (4.1)
I had access to materials (e.g. online material criteria, exemplars etc) that helped me prepare for the write up	4.9 (4.6)
Assessment requirements/criteria for the practical write up were made clear to me	4.9 (4.4)
I received advice and feedback that helped me to understand how to write a practical report	4.7 (4.5)
The practical and associated write up helped develop key skills I will need in the future (e.g. data analysis, practical skills, numeracy, scientific writing, presentation, group work)	4.4 (4.5)
I received marks and feedback in time to help me improve subsequent assessments	4.6 (NA)
The marks breakdown and generic feedback have helped me identify where I can improve in subsequent assessments	4.3 (NA)