

Peer marking of formative assignments

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Background and rationale

A first year module within the Biomedical Sciences Module portfolio, BM1119 Human Physiology serves as a core module to introduce students to the key concepts of this discipline as a prelude to later more advanced studies in physiology. As part of the delivery of the topic, students are required to undertake four items of practical work in Human Physiology, which serve to address practical skills in human physiological investigation as well as to underpin theoretical content of the module. Of these four items, the first exercise is assessed formatively and the remaining three are assessed summatively, thereby contributing to the module assessment. The current practice is that all work is marked by the staff. The module has a heterogeneous population of approximately 200 students. In consequence, there is heavy workload on staff, which slows turnaround time and delays important feedback to students. This compounds the problem of students over-exaggerating the value of the practical report in this module and spending excessive amounts of time on the practical report to the detriment (in the module team's view) of other work on the module. This project sought to improve feedback on practical reports by enhancing the students' comprehension of the assessment process and the feedback applied to an assignment. Improvement in subsequent practical reports was one anticipated and immediate consequence of the project. A secondary outcome was an overall improvement in module overall pass rate. Saving of staff time and acceleration of turnaround time were also anticipated.

The innovation

Former practice: one formative assignment (staff marked), followed by 3 summative assignments (staff marked), contributed 40% to the module mean mark.

Present practice (incorporating this project): one formative assignment, **now peer marked**; 3 summative assignments, staff marked but zero rated in terms of the overall module grade however students must pass in order to pass the module overall. All reports were to be completed and submitted within the practical session.

The practical assignment selected for the peer marking project was the 'Demonstration of human ECG recording and the determination of the resultant vector'. This is a formative assignment which students, working in teams, perform in the laboratory, complete a report proforma, answer set questions and hand in at the end of the practical session.

At a subsequent tutorial session, ideally as soon as possible after the practical, the practical report proformas are returned to the students, on a random basis, along with a mark sheet, marking instructions and a feedback commentary sheet. Students mark the practical, assign a grade and provide written feedback on the practical report. Staff are available throughout the tutorial session to deal with student queries and any need for clarification. These are then returned to the staff for analysis of student marking before returning them to the original author of the practical report.

The outcomes

Analysis of quality of student marking

- 65% of the scripts were re-assessed by staff
- Of these 69% matched staff assessment within one grade point
- A further 25% were at least within 3 grade points
- 6% had significant errors in marking
- With few exceptions (7) the staff grading was more generous than the student grading
- The entire exercise probably enjoyed moderate compliance in that 77% of the students participated in the exercise

Perceptions

The majority of students who participated in the exercise made a very thorough attempt at both grading and applying feedback to the practical reports. However, discussion with a number of individual students revealed that despite the moderation by staff, they had reservations about the process and were uncertain of its application in the future to summative assessment.

Benefits

Students applied themselves in a more focussed way to the subsequent practical exercises and the written components. Far better answers were given to discussion points and there was evidence of better preparation for the session in the reports submitted for summative assessment. In the main, the reports were constructed in a more direct style without unnecessary 'padding' out. It appeared in the present study that knowledge of the assessment process and feedback led to an improvement in practical work and the reporting of that practical work. At the end of the module when all assessments had been completed, the overall performance of students was 11% better in terms of pass rate and the number of A/B grade passes was also increased. Whilst this improvement could be attributed to an 'cohort' difference, it is unlikely in terms of the size and heterogeneity of the module population.

Evaluation

Unfortunately, a post-experience questionnaire was not performed, though it should be noted that the project received no adverse comment on the University Module Evaluation Proformas that students filled in at the end of the module. Nevertheless this does not preclude a measure of self-critical analysis. Evaluation from the students was unlikely to be readily obtained as this part of the practical component was not completed sufficiently swiftly. This was a consequence of unique timetabling difficulties in this particular year and the circus nature of the delivery of practical classes on this module. The former could not have been predicted at the outset of the project, but the latter problem should have been acknowledged in the project design. A further consequence, derived from the circus style organisation was that turnaround time was still too slow, a situation exacerbated by the need for staff analysis which took a considerable amount of time. Experience of the student marking session indicated that more instruction needed to be given, partly to enhance student confidence in dealing with the process. In addition, the original mark scheme needs to be extended to account rather better for the variations in student answers. Overall, the main intentions of the project, to improve student perception and then subsequent achievement on the module were realised however, staff time was certainly not reduced (if anything increased) and turnaround time was compromised, partly through external influences but also as a consequence of this project.

Future developments

The module team perceived that there were real benefits from the project. Clearly the environment of the work was not ideal for a completely successful project. Nevertheless, critical evaluation does inform the process of planning the future for this aspect of the module. We can adjust the format and environment of the exercise in the light of recent experience to provide a better process for the students on the module.

Observation during the course of practical sessions indicates that the session can be modified in such a way as to ensure the completion of practical work and writing up the work performed, leaving time at the end of the session for peer or self marking. As reports are already in the format of proformas that have to be filled in, students are able to complete the practical work that fulfils the outcomes of the module more than adequately. This will permit the self-marking and feedback process to take place immediately upon completion of the exercise which we believe to be invaluable as a means of promoting learning. A significant improvement in turnaround time should be the result. In addition, tutorial time is spared for other learning experiences on the module.

To this end, clearer instructions on the marking process will be constructed and incorporated into the practical session handbook that all students receive. For the marking session, a marking scheme with a greater level of explanation and detail will be provided, and the students will have more detailed feedback sheets. Although the original sheets contained suitable information, the project allowed reflection on the current material and indicated ideas for enhancement. Consideration will be given to

extending the process to summative assignments. This aspect of the module is already assessed on a pass/fail basis and does not contribute to the overall module grade. Furthermore, as a Level 1/Year1 module, the grade does not contribute to the final degree classification; the module team wish to encourage the process of learning rather than the current exaggerated focus on summative assessment by the student themselves. The team considers that an emphasis on more formative styles of assessment in the future will be of benefit to the students. The module team will also explore ways of utilising the on-line learning framework to pursue this approach to learning from the practical work.

References

Hughes, I.E. (1995) 'Peer Marking of Practical Write-ups' page 6 in 'Compendium of Innovation and Good Practice in Teaching Pharmacology' Leeds University Print Services. Leeds.

Hughes, I.E. (2001) 'How to Make Students Mark' Times Higher Education Supplement Page 23 April 20th 2001.