Author's response to reviews

Title: Delivery and use of individualised feedback in large class medical teaching

Authors:

Steven A Burr (steven.burr@nottingham.ac.uk)
Elizabeth Brodier (elizabeth.brodier@nottingham.ac.uk)
Simon Wilkinson (simon.wilkinson@nottingham.ac.uk)

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Author's response to reviews: see over
We describe a new method for automated delivery of individualised feedback to students following summative e-assessment. This method was publically commended by the GMC following their most recent review of our medical curriculum [17]. As yet there are no further details on the method in the public domain. Our paper is therefore an attempt to share our insight as to how this innovation works and can be implemented, while also providing some evidence from students as to how useful they find it.

Please find our responses to referee comments below.

Referee 1:
Response: No corrections were suggested. We are grateful for the praise.

Referee 2:
Response: We are grateful for the preamble highlighting the importance of the paper.

Firstly the abstract overall totally needs re writing as it is unclear - the methodology is confused and it is not clear at all how the surveys were administered.
Response: We would be happy to clarify the methodology to a degree appropriate to an abstract, but can’t see what is confused or unclear. The method of administration is included, one was online, the other was by interview.

The conclusions are rather like a sweeping statement in the abstract and jump straight from learning outcomes to surmising that feedback is effective.
Response: We have moderated the wording of the conclusion from ‘Blueprinted feedback contains the key characteristics of effective feedback so that with further education and support concerning its use, it can become a highly useful tool for the individual and teacher.’ to ‘Blueprinted feedback contains the key characteristics which should impart effective feedback, so that with further education and support concerning its use it could become a highly useful tool for the individual and teacher.’

The strength of the whole paper is around giving students more quantitative feedback. The major weakness relies in the authors attempt to over-extrapolate from giving feedback to the students utilising the feedback – and there is no evidence for this (either within this paper and is limited in the literature!). Within the first paragraph of their background the authors again make another sweeping statement that ‘this will lead to conscious competence’. There is a wealth of increasing evidence around that feedback is not ‘reaction’ and giving feedback does not in any way from all these increasing amount of research evidence significantly impact upon students abilities to make use of the feedback and alter performance. This is of course our hope but the proportion of students
that are able to do this purely by giving them such quantitative feedback is limited.

Response:
Changed ‘With further self-directed learning, this will lead to conscious competence and corrected understanding; the fundamental purpose of feedback.’ to ‘With further self-directed learning, this will hopefully lead to conscious competence and corrected understanding; the fundamental purpose of feedback.’

Teacher facilitated models as the authors identify places high demand upon resources; this is the strength of the paper as it provides a useful model for giving students feedback in another form rather than just returning the question items to them. However, feedback models particularly as described by the authors ‘used according to the teachers preferences and abilities’ have little impact upon students abilities to utilise feedback - that is a completely separate literature and I would suggest is avoided within this paper. There is increasing amount of work been done on self regulated learning and students’ abilities to calibrate and judge the quality of their learning and how this impacts upon their performance. Presenting the information as learning objectives has potential but is not fact that it will enhance their ability to utilise feedback. It is well recognised that students have difficulty with feed forward and the recognition of skills rather than learning outcomes for future learning.

Response:
We agree and cannot see that the paper contradicts this view.

The methodology needs completely re writing. It is completely unclear how many surveys were done, how the surveys that appear to have been done across different years of the course were analysed, whether one or two cohorts contributed. There are three different descriptions of surveys, one that is reported to be behaviour based survey another reported to attitude based survey and yet another that is referred to as been an interview administered survey.

Response:
The comment appears to only relate to the ‘Data collection and analysis’ section of the methods and so we cannot see how the methodology needs completely rewriting. However we agree that the number of surveys, cohorts and any pooling of data does need to be clear. In this regard both the last sentence and figure 4 legend cause confusion and have been reworded: ‘As a result, the views of three year groups were recorded to show differences in attitude at each stage of study.’ And ‘When considering the attitudes of students across the three years of study, it is clear that their evaluation of the usefulness of the report declined with progression through the course.’ Otherwise we feel that the number of surveys, cohorts and any pooling of data is clear. The number of surveys is clearly stated as two throughout. The survey of attitudes was undertaken by interview, in this section this is made clear by ‘The second survey explored the attitudes concerning use of blueprinted feedback, and targeted three year groups through an interviewer-administered survey’, and also the methods in the abstract, and by Table 1 ‘sample size from both surveys’. Table 1 explicitly states the number of cohorts and their respective samples sizes, values for N given elsewhere throughout the paper make it clear whether there has been any pooling of data or not. In an attempt to make this clearer we have amended two of the column headings in
Table 1. ‘Year of Entry’ has become ‘Year of Entry (cohort)’, and ‘Population’ has become ‘Stage of Study when Surveyed’.

The response rates for all of these are extremely variable and deductions particularly from those that have a less than 10% response rate cannot be extrapolated from to make deductions.

Whilst some of the information around students describing their reasons for not visiting or not achieving objectives are perhaps interesting and could be utilised in a descriptive way, rather than trying to give a percentage when there is such a low return rate is invalid.

Response:
The sample sizes are included and then percentages derived for ease of comparison. The lowest response rates are around 10% and this is clear.

Additionally I would suggest that all the extrapolation and correlation with what I infer to be previously described learning styles questionnaires (which is reported to rely on students reporting their learning style rather than the authors having correlated – another aspect of the methodology and results that is totally unclear) is really invalidated by the low return rate and is over extrapolating from this data. The validity and usefulness of learning styles has been debated quite hotly in the literature in the last few years and referencing it within this paper actually detracts from the valuable parts of the paper.

Response:
Agree and have consequently removed all mention of and reference to ‘style’ (11 occurrences).

The discussion opens well. However within the discussion as I have mentioned earlier really would remove the percentages in relation to the surveys (having clarified what surveys were done and if clarifying whether pooled data is been used across years or not).

Response:
Addressed in response to earlier point.

As mentioned previously I would also remove the references to learning styles and stick to in the discussion the value of providing programmatic assessments and feedback on assessment outcomes that correlate across learning domains as described in this model.

Response:
Agree, addressed in response to earlier point.

The conclusion also needs rewording from again the assumption that this will ‘alter’ the effectiveness of their learning.

Response:
We do not state it will alter the effectiveness of their learning but that it will help to track effectiveness. We have made this more explicit by changing ‘Thus the blueprinted report
helps learners track their mastery of the objectives and in turn the effectiveness of their learning’ to ‘Thus the blueprinted report helps learners track their mastery of the objectives and in turn *monitor* the effectiveness of their learning’

The statement that it does encourage reflection may well be true but perhaps the usefulness of the linked resources could be brought out more perhaps including or suggesting development of other resources that would encourage such reflective learning and practice.

Response:
Following the suggestion of referee 3 we have inserted ‘It may be possible to encourage reflection by providing a formative e-assessment where the blueprinted feedback would undergo blinded peer-review with the purpose of getting peer recommendations on how to improve performance. This would provide the opportunity for collaborative interaction and motivate students to spend time analysing the reports prior to a summative end of term e-assessment which would then test the same objectives but using different questions.’

Referee 3:
Minor Essential Revision 1:
Abstract>Background>line 3: " ... responses assess" I believe you lack an "and"
Response:
Included ‘to’ rather than ‘and’

Minor Essential revision 2:
Figure text: Figure 3 - revised traffic lights> Sentence 1: Please revise so that it is more readable.
Response:
Changed ‘Pie charts showing which traffic light *learning* objectives learners in years 2 and 3 chose to revisit lecture content for following blueprinted feedback.’ to ‘Pie charts showing which traffic light objectives learners in years 2 and 3 chose to revisit lecture content for.’

We are particularly grateful for both the praise and insightful suggestion for further research by referee 3, which helped address the final comment of referee 2.

Referee 4:
No corrections were suggested.

We thank all referees for their helpful suggestions which have improved the paper. Should any further modification be required we would be happy to have the opportunity to improve the paper further.