

Higher Education Bioscience Teacher of the Year Award 2020

Mind the Gap - Improving Assessment Literacy in a Cohort of Level 5 Bioscience Students

**Dr Alfred Thumser
School of Biosciences & Medicine
University of Surrey**

Approximately three years ago, I was reading draft dissertations of Level 6 research project students and realised that I was providing essentially the same feedback that I had provided previously for their presentations; in short, “what is your story?” Three thoughts crystallized: 1. The concept of “critical thinking” is problematic for many students; 2. Students often lack the ability to transfer feedback from one assignment to another, even at FHEQ Level 6; 3. Why should they? – we, as teaching staff, do not explicitly teach students how to engage constructively with feedback, while a preponderance for multiple-choice exams at Levels 4 and 5 does not enhance writing or critical thinking skills. I wanted to improve students’ writing skills and their engagement with feedback, and therefore introduced formative workshops to develop understanding of the grade descriptors and utilise peer feedback to enhance student learning.

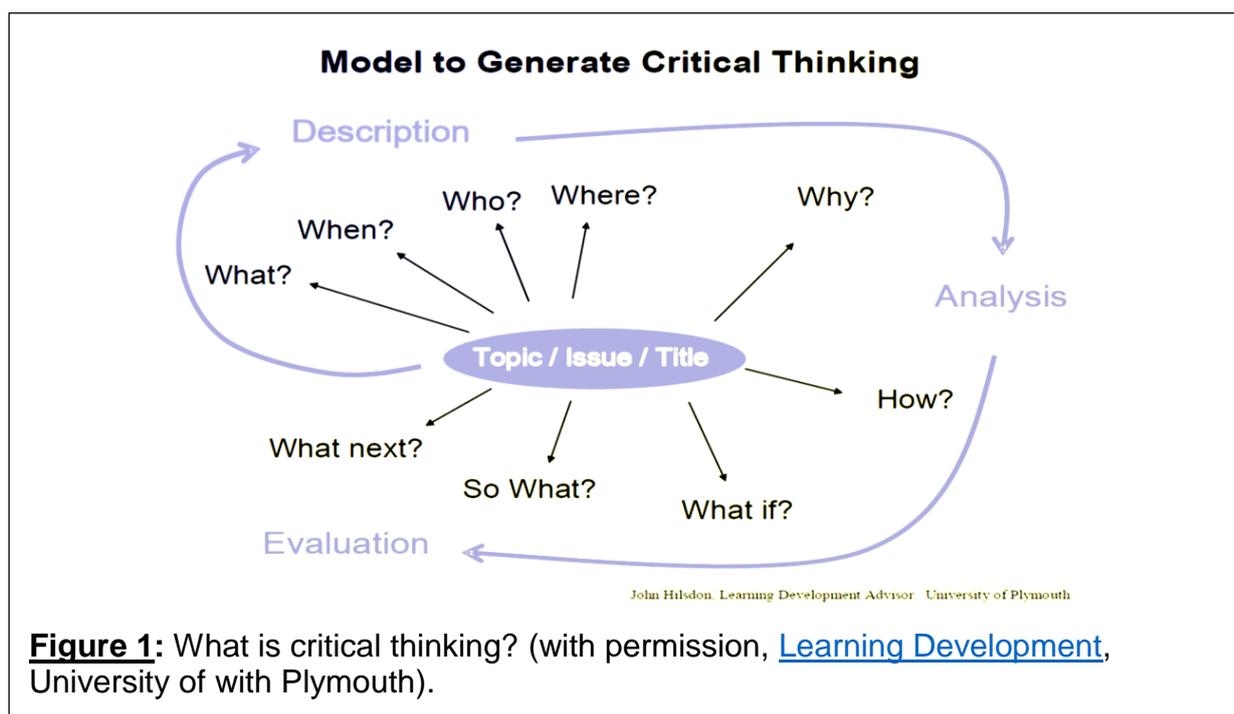
“Dr Thumser has been an invaluable colleague in facilitating development of our pedagogy in the School of Biosciences and Medicine. As a testament to his ingenuity in this regard, the School appointed him to the role of ‘Strategic Lead for Education’ enabling him to share his ideas more widely and to implement them.”
Professor David Blackburn, Head of School, Biosciences & Medicine, University of Surrey.

Overview of Writing Workshops [2018/19] – How?

I introduced formative, voluntary writing workshops on a Level 5 module in the autumn semester of 2018, timetabled four non-compulsory workshops (Ethics approval: University of Surrey UEC 2018 088 FHMS). I gave an overview of the workshops and my rationale during an introductory module lecture, emphasizing that the workshops were formative and primarily targeted at students who were “struggling” with essay writing.

In *Workshop 1*, I gave my perspective on a “good” essay” and focussed on the W’s in good writing (Figure 1), as also demonstrated here in my section headings. Subsequently, the students read a [news article](#), as an example of good writing, with subsequent feedback by each team to the entire class. An essay topic was then introduced so that the students could prepare a bullet-point essay outline for discussion during the next workshop.

In *Workshop 2*, the students were encouraged to discuss their essay outlines, first individually, then as a small group and finally with the whole class. Students were then asked to write an essay in preparation for *Workshop 3*, which started with guidance on “peer review and feedback”; subsequently, students peer-reviewed each other’s essays, providing verbal and written feedback to their colleagues. *Workshop*



4 was an open forum where we discussed different aspects of peer feedback, ideas for increasing attendance and improvements to the workshop format.

Students' Feedback [2018/19] – So What?

Anonymous feedback received from students was encouragingly positive and constructive (Appendix 1), with many comments related to the student's own learning and insightful ideas on improving the workshops, which have been implemented in the second iteration of the workshops (2019/20).

Reflection [2018/19] – So what? What next?

The atmosphere during the workshops was very positive, with students engaging in discussions. There were two broad concepts that influenced the next iteration of the workshops in 2019/20:

1. Did the workshops have a positive effect on assessment outcomes?
 - An analysis of student outcomes on the essay component of the BMS2035 module shows a statically significant improvement in students that attended at least one of the workshops (Figure 2);
2. How could we take forward student suggestions to improve the workshops? Several changes were made before the start of the 2019/20 workshops. These included:
 - Increasing workshops to two hours;
 - Employing Level 6 peer tutors to facilitate the social dynamics within groups;
 - Discussion and “grading” of anonymized student essays from a previous exam, rather than a newspaper article;
 - The mark improvement seen with the 2018/19 student cohort (Figure 2) was shown to the BMS2035 2019/20 students during the module's introductory lecture, to encourage attendance.

Writing Workshops [2019/20] – How?

The broad ethos of the workshops was not changed for 2019, though I made several changes based on the students' feedback and my observations. There was a substantial increase in registrations for *Workshop 1*, which was immensely pleasing though also required timetabling modifications (3 sessions for each workshop; removal of *Workshop 4* and, unfortunately, the one-to-one feedback sessions, the latter due to personal workload pressures).

Students' Feedback [2019/20] – So What?

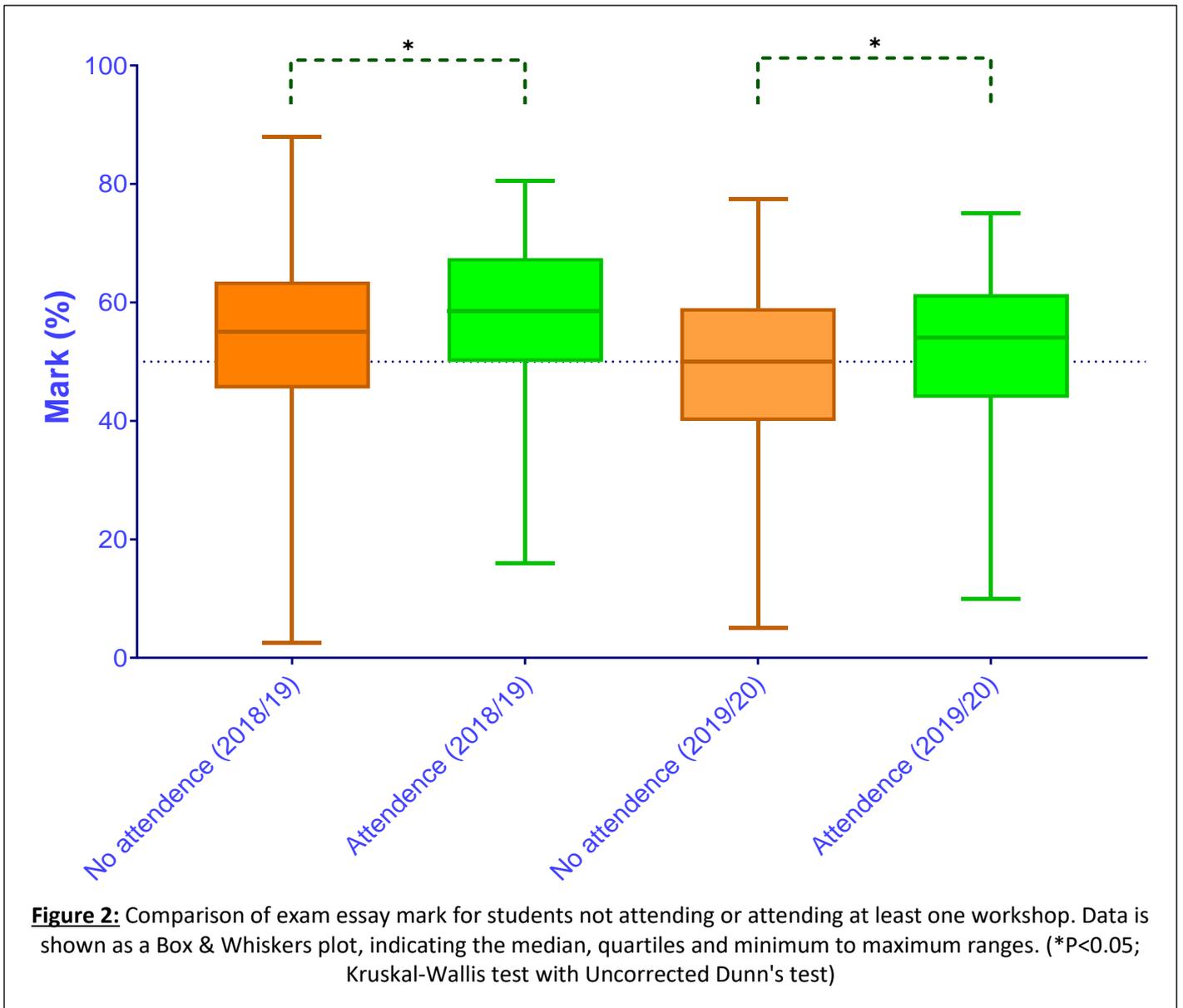
The student feedback (Appendix 2) was, again, encouraging and constructive, with several pertinent and actionable points:

- Students prefer lecturer feedback;
- Group discussions and dynamics could be improved;
- Timetabling could be improved to avoid clashes with coursework deadlines.

Reflection [2019/20] – So what? What next?

Statistical analysis showed that there was a small, but significant, benefit to students attending at least one workshop (Figure 2). Several changes are planned for the next iteration of these workshops, based on my reflections and in response to student feedback:

- The students, understandably, have greater confidence in feedback from the lecturer. Thus, I will reconsider the provision of one-to-one feedback, as in the 2018/19 iteration, and online peer review;
- The workshops will be timetabled earlier in the semester, to avoid coursework deadlines;
- Two-hour workshops during 2019/20 are conducive to student interactions and discussion;
- The incorporation of Level 6 peer tutors was not successful, in part due to their limited availability, which affected group dynamics and consistency of feedback.



Quotes from the National Student Survey 2019

“Formatting of quotes etc blue Biochemistry modules were the best in terms module content, lecturers, teaching and feedbacks.”

“Module leaders of Biochemistry BSc were excellent and communicated extremely well with the student cohort. Feedback was always on time and academic staff always made themselves available for additional support and guidance (even with their busy schedules).”

“Some of the lecturers particularly in the Biochemistry and Pharmacology modules are some of the most incredible members of staff from the university. They work hard outside of lectures to prepare for classes, feedback sessions and support students and the university would be at a loss without these members of the Bioscience team.”

Final Thoughts – *What Next?* [2020/21]

The workshops showed a beneficial effect for assessment outcomes (median increases of 4%-5%) and highlighting the advantages of peer learning from a social and academic perspective. I have a strong desire to reduce attainment gaps in our student cohort and would therefore like to increase workshop attendance by the lowest quartile in terms of level 4 grades. Also, students with mental health issues, e.g. anxiety, autism, are not inclined to attend the workshops. At this point, the following changes are planned for 2020/21:

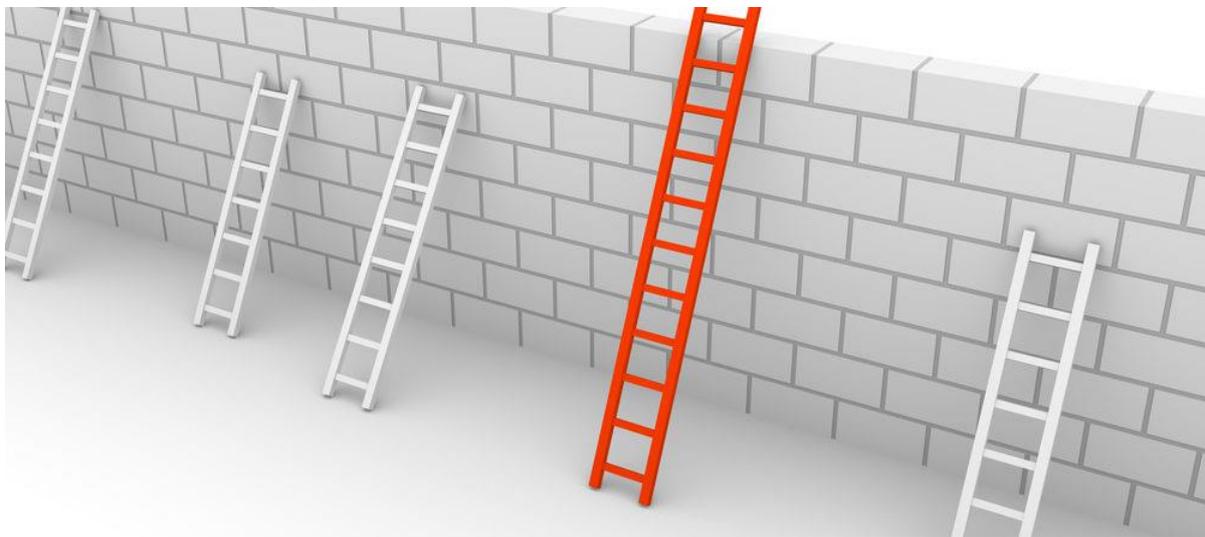
- The workshops described here will integrate with the University's Peer Assisted Writing Scheme (PAWS);
- PhD students will be utilised as Peer Tutors, thus ensuring consistency between workshops;
- Peer feedback will include an electronic component, e.g. [PeerScholar](#) or [Aropa](#), thus facilitating better engagement by students lacking confidence in direct face-to-face interactions.

Furthermore, I am in the process of drafting a paper on this project, which should provide a starting point for establishing a pedagogic research profile and "brand". I am developing a philosophical concept related to a student's learning journey that overlaps between a tube map and metabolic pathway (Figure 3). Students may have the same destination, but they take different "trains" and routes; academic metabolism is facilitated by enzymes (e.g. lecturers), allosteric activators (e.g. peers), allosteric inhibitors (e.g. low grades, peer pressure) and even reversible "reactions". Can you give me some time to distil these thoughts – an update will follow in my presentation.

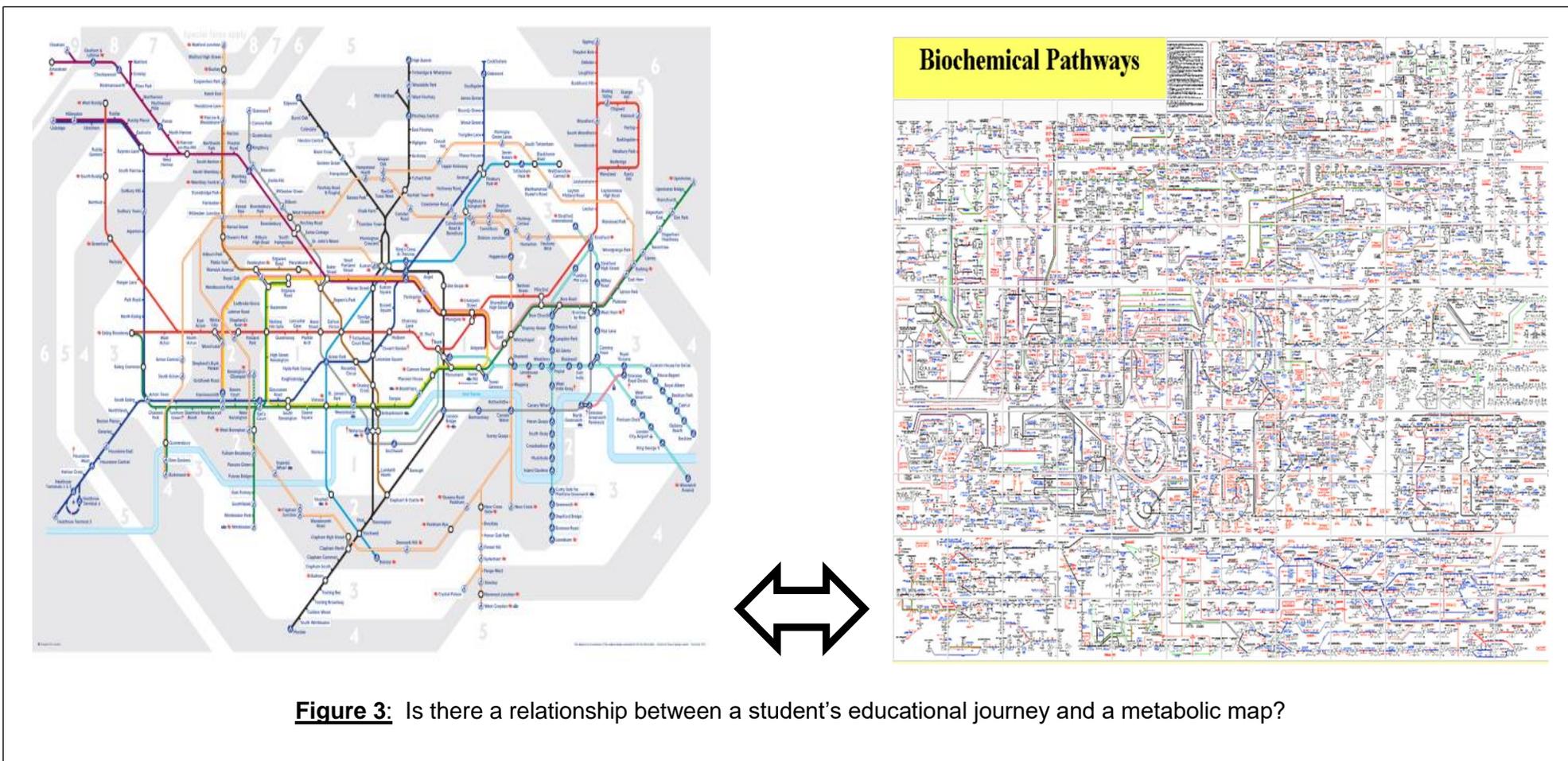
Dissemination & Publications

This project and outcomes have been presented in several forums: Learning & Development workshop (University of Surrey, 2019); SurreyExcites symposium (University of Surrey, 2019); Royal Society of Biology - Biosciences summit (September 2019); CEU San Pablo University, Madrid (April 2020); SurreyExcites symposium (University of Surrey, April 2020)

“I hold your leadership of pedagogical enhancement of our Biosciences programmes in the highest esteem. Your action-centred approaches have had a positive impact from the faculty board through to potential applicants and their parents. The evidences that you provide, which are fed through the FLTC to our Faculty Executive Board, from your implementation and practice of innovative technologies have impacted on our Faculty Education Strategy. I very much appreciate your consultative approach and your integrity in educational values. I have watched those who are mentored by you grow in confidence and capability, developing their own unique styles which are highly valued by students.” Prof Helen Griffiths, Executive Dean, Faculty of Health and Medical Sciences, University of Surrey.



Word count: 1,480 (limit: 1,500)



Appendix 1: Anonymous feedback comments from a survey undertaken in December 2018, after completion of the 2018/19 workshops.

<p>How did you engage with and reflect on the feedback?</p>	<p>Do you have any feedback to help improve the workshops?</p>	<p>How can we encourage other students to attend?</p>
<p>I used the feedback to alter my essay and will apply it broadly to my essays;</p> <p>It helped to understand how to use my time appropriately to directly answer the question;</p> <p>I saw the peer review feedback in a new light, and I started understanding it;</p> <p>One to one feedback informs on what is good and... where more of your time can be focused, which is particularly helpful when exams are very content heavy. I have read the feedback twice and will be acting on the issue of flow in my essay;</p>	<p>Longer sessions with more guidance;</p> <p>I don't know how, but try and find a way to engage the students in the upper grades as well;</p> <p>In my opinion, we needed more time with the feedback part, but I understand it is hard to fit in the timetable;</p> <p>Less time for discussions in groups as conversation could drift after a while;</p> <p>Groups could be smaller to aid in comfort and conversation;</p> <p>More technical writing advice;</p>	<p>Show proof to others of benefits of attending (i.e. grades before compared to after -type info);</p> <p>Don't. If students want to improve themselves, they will come the people who don't, won't;</p> <p>Make it mandatory for students with lower grades;</p> <p>Better timetabling; position after a lecture rather than standalone so that people are more encouraged to attend whilst on campus;</p>

Appendix 2: Anonymous feedback comments from a survey undertaken in December 2019, after completion of the 2019/20 workshops.

<p>Could you please elaborate on the usefulness of the Peer Feedback?</p>	<p>How did you engage with and reflect on the Peer Feedback?</p>	<p>Do you have any feedback to help improve the workshops?</p>
<p>The peer feedback was very useful - it made me focus... more about the best way to write the essay;</p> <p>It was interesting to see how everyone had quite a different view on how to take on the essay question, so I got some new ideas from this;</p> <p>The peer feedback approach created a friendly environment that allowed for helpful constructive criticism to be suggested to improve the essay I wrote. Also, it allowed me to observe how my essay writing style differed to those around me;</p> <p>Limited - the peers also in the class are never keen to talk, perhaps out of nervousness which limits the scope of how you can learn from peers;</p> <p>I would prefer feedback from the lecturer;</p> <p>It was good but sometimes peer feedback is less reliable than marker feedback;</p>	<p>In order to reflect upon this, I went over the comments and understood them; afterwards, I applied these to my work as much as I could;</p> <p>After reading other students essays and then taking in the feedback of my own, I've created a list of common things people were commenting about my essay;</p> <p>I think I now know how to write an impactful 'so what' [conclusion] statement;</p> <p>I went to the first two workshops, which were very fun and helpful, but I did not go to the third one because I had to revise for 2 exams and submit 3 pieces of coursework the following week;</p>	<p>The workshops were overall useful; however, I was also curious about the opinion of the tutor on my essay;</p> <p>Great timetabling! Keep this up!</p> <p>If possible, workshops earlier in the year would encourage more people to attend workshop 3 as many students were likely stressing over mid-term assessments</p> <p>To create more interaction, perhaps pairing the students to review one essay together and collaboratively provide feedback could help. At the end, pairs can discuss with other pairs on the table on what they have seen overall in each essay;</p> <p>Workshop three felt a little quieter due to the nature of the task but I think if we wrote down the feedback of another essay and verbally gave it to them rather than them reading it, there would be better communication and more understanding;</p>