



PTAS Project Report (for SMALL PROJECT GRANTS)

Project Title:

Assessment Literacy for Graduate Attribute Enhancement (ALGAE) in Biomedical Sciences

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Brief Report (maximum 500 words)

What did you do?

This project investigated whether an assessment literacy (AL)-based teaching approach in tutorials could enhance student confidence in; (a) self-assessment, (b) comprehension of standards and (c) communication of primary research data, interpretation, and conclusions. Further, we sought to explore whether AL would have merit in enhancing graduate attribute development alongside domain specific learning.

As proposed, we translated all our formative tutorial teaching to an AL format. This involved development of new tutorials and collaborative work amongst the tutor team (4 tutors). In tutorials, data re. student grading of authentic answers was collected, and a new questionnaire was developed to gather student feedback on the importance of understanding assessment, standards and GA, the value of AL tutorials to exam preparation and perceived confidence/ competency in self-assessment/ comprehension of standards and communication. The questionnaire was completed by 159 students. Survey data analysis was conducted using Excel, R and Nvivo. Likert scale data was analysed in Excel and R. Where appropriate, differences in responses to specific questions were compared using a Mann–Whitney U test treating the Likert scale as ordinal data. Responses to open-ended questions were imported into NVIVO and analysed from a thematic perspective.

Due to COVID it was not possible to compare whether the AL intervention had a positive effect on overall marks for the literature comprehension assessment (compared to previous years). This was because the 1.5h exam format was changed to a 24h online assessment.

What did you find out?

Data analysis is ongoing. Notable preliminary findings are as follows:

1. Student responses to the AL tutorials were positive. Most (>86%) reported the AL approach helped them comprehend expected standards and prepare for the final assessment. Further, more than 75% would like the approach to be adopted in other courses.
2. Notably, most students reported enhanced confidence in attributes of importance to their degree and beyond. Specifically, students reported the AL tutorials enhanced confidence in;
 - a. Communication of interpretation and reasoning (71% agreed or strongly agreed),
 - b. Their appreciation of what a reader needs to know (80% agreed or strongly agreed) and
 - c. Their evaluation and use of data (74% agreed or strongly agreed).
3. In relation to GA, responses from our cohort were mixed. 61% of students had heard of GA and the same percentage reported they know when teaching is contributing to GA development. Importantly, however, 85% reported that GA development is an important aspect of their degree.



4. Themes emerging from analysis of free-text and qualitative responses included:

- a. Post-intervention, students did not question paper selection (as they had in previous years) and better comprehended our assessment purposes - understanding it is intended to enhance their analytical and communication skills.
- b. Comments around differences in difficulty of the tutorials and the linked exam decreased.
- c. Students valued the opportunity to grade, enjoyed peer discussions and reported benefitting from guidance on practices such as a systematic approach.
- d. Students also reported increased confidence in attributes classified under 'Research and Enquiry' and 'Communication' in the University Graduate Attribute skill group definition.

In summary, in 2020, students were very positive about the beneficial effects of the AL tutorials and, two years on, focus groups are currently being used to ascertain the long-term benefit of this intervention.

5. Anecdotally, tutors reported that they valued the AL approach as it redirected the emphasis of tutorials from tutor-led to student-led learning and enhanced consistency of teaching. Further, exam markers commented that student answers were demonstrably more systematic in their approach and more students referred to and used data to support conclusions.

How did you disseminate your findings?

ALGAE was presented (prior to data acquisition and analysis) at the CMVM good practice showcase in 2020: <https://www.teaching-matters-blog.ed.ac.uk/college-of-medicine-and-veterinary-medicine-good-practice-showcase-2020/>

Amongst other routes, the project will also be presented at the BMTO Learning and Teaching Network (on restart in 2022) and in Summer 2022 findings will be written up for submission to a peer-reviewed journal.

What have been the benefits to student learning?

Evidence collected to-date indicates adoption of the AL approach has:

- Enhanced student comprehension and application of standards
- Helped students feel confident and prepare for their assessment
- Enabled students to better develop and feel confident in the use of core skills and graduate attributes

How could these benefits be extended to other parts of the university?

Approaches to assessment literacy are widely applicable and described in papers by Rhind and others. A key finding here is that whilst GA development may be implicit in many of our existing learning activities and assessments, the process may be enhanced via a process of Graduate Attribute Literacy. Results suggest students often do not recognise when GA development is occurring or comprehend the benefit of attribute development beyond the immediate activity. The authors propose that GA should be proactively integrated into any curriculum and their development may be addressed through a focus on 'attribute literacy'. To explore this, the authors are developing a modified form of Miller's pyramid to map; (a) Biomedical Science (and wider undergraduate) competencies (b) domain specialisms and (c) graduate attributes to student progression.

Who can be contacted for further details?

Please contact: Kevin Robertson (kevin.robertson@ed.ac.uk) for further details and information.



Financial statement:

This project had remaining funds unused and details of how to return the balance have been exchanged. The School Administrator (Morag Laidlaw – CMVM) can provide financial statements showing the funding usage as and when required by the UoE Development Trusts who may require it for auditing purposes.

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