



PTAS Project Report (for REGULAR PROJECT GRANTS)

Project Title:

Project type:

A Research Project (research focus on particular dimension of teaching, learning, assessment)

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Schools/department : Royal (Dick) School of Veterinary Studies

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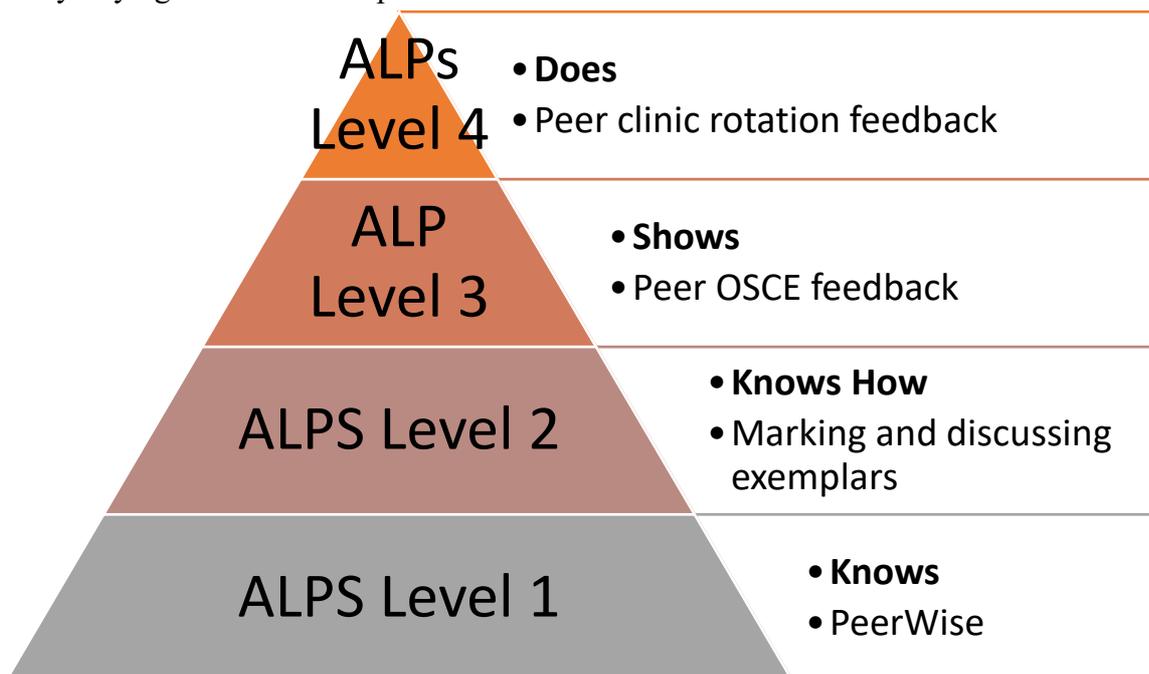
Report (maximum 1500 words)



Assessment literacy is a term which encompasses the range of knowledge, skills and attributes necessary to understand both the purpose and process of assessment^{1,2}. Price et al. (2012) describe a series of 6 competences that underpin this notion of assessment literacy and these can be broadly grouped into two categories - knowledge and understanding of the assessment principles and students' ability to understand assessment standards, and ability to act as assessors themselves. The notion of assessment literacy is entirely consistent with current views on feedback – in particular that for quality feedback to be sustainable, students need to be given specific opportunities to engage with both the more 'technical' aspects of assessment but crucially the academic understanding of standards and expectations – as Sadler describes, they need to '*appropriate for themselves three fundamental concepts - task compliance, quality and criteria*'⁴.

In this project, we built on earlier work looking at the development of assessment literacy in veterinary students in relation to written work and explore the concept as it relates to practical, clinical and professional skills development. In doing so, we aim to build a programmatic approach to assessment literacy. We align our work to the well-known one (in medical education) of Miller's pyramid⁵. Miller describes a framework for assessing levels of clinical competence – with the necessary cognitive levels of knowledge and application of knowledge (knows and knows how) underpinning the behavioural ability to apply what has been learnt in practice – at the level of 'shows', for example in a simulated environment such as an Objective Structured Clinical Examination (OSCE); and at the level of 'Does', assessing how a student actually performs in the work place.

Adapting this model to the context of assessment literacy, we propose the model in Figure 1 as an 'Assessment Literacy Pyramid' (ALP) against which we align the proposed activities in this bid. We have previously published on this approach at ALP level 1 and 2²; demonstrating the utility and advantages of engaging students more explicitly in the assessment process and supporting them to see assessment from both the student and examiner perspective thus clarifying expectations and demystifying the assessment process.





The assessment literacy approach requires that students should be able to formatively assess their own performance, as well as that of their peers, at all stages of this pyramid. This is consistent with the social constructivist assessment process model described elsewhere that students need to actively engage in assessment and feedback ⁶ in order to fully understand the process. Aspects of this can be fulfilled with reciprocal peer feedback, giving students the opportunity to receive feedback and apply their own understanding of assessment criteria.

Research Methods and Ethos

In many ways, the development of assessment literacy reflects a constructionist agenda, which encourages researchers to investigate how “*realities of everyday life and related social worlds are constructed and sustained . . . constructed from what [and] under what circumstances?*” ⁷. This project used mixed methods to explore how students formed their understanding of assessment literacy at different ALP levels. We wanted to capture organic discussions to evaluate the staff-student shared understanding of assessment and feedback. Much of the qualitative analysis will originate from an autoethnographic position with researchers describing their own working environment, which is an important consideration for workplace based assessments. Although we aim to explore the practical activities staff and students engage in to construct their assessment literacy, we will also explore other approaches should they arise within the project.

Evidence pertaining to ALPs’ effectiveness was gathered in the course of evaluating the approach, including data from surveys, interviews and focus groups. Data presented here pertains to projects which have ethical approval from the Royal (Dick) School of Veterinary Studies Human Ethics Review Committee, reference numbers: HERC_86_17 (primarily Level 3 data), HERC_134_17 and HERC_69_17 (primarily Level 4 data).

ALPs Level 1 & 2

At the ‘Knows’ and ‘Knows How’ level, an excellent example of an assessment literacy activity is in the context of multiple choice questions (MCQs), which are used ubiquitously to assess knowledge (and if well written, application of knowledge). In our ALP model we have merged the ‘knows’ and knows how’ levels in recognition of the fact that well written MCQs and free text questions can be used to assess at the ‘knows how’ level. For MCQs, the tool ‘PeerWise’ has been demonstrated to have great utility in terms of collaborative learning and helping students understand the challenges and nature of MCQs from both their own and an examiners perspective ⁸. Students were asked their views on the standard setting process via questionnaire containing Likert scale and open-ended items. Complete survey data was available from 124 students, (response rate 87%). 86% of participants agreed or strongly agreed with the statement ‘Participating in the standard setting exercise has helped me understand the process of assessment better’,

A particular theme emerging from the open ended free-text data related to assessment literacy:



'I had no idea of what it really was. So this gave us a good idea of how the process works. I don't feel like I am going into an exam blind in terms of how it may be assessed'

'greatly changed my opinion on the importance/fairness/value of multiple choice testing in comparison to other methods'.

'Interesting! Didn't realise as much work went into checking the questions were at the right level. Makes me feel more confident about the process in general. Good to understand how it all works'.

ALPs Level 3

The Objective Structured Clinical Examination (OSCE) is the classic assessment in veterinary (and medical) education used to assess clinical skills in a simulated environment. An approach to developing assessment literacy at this level is to engage students as assessors in formative OSCEs (FOSCEs). In this example, students act as one another's examiner. Students are given a short briefing on the assessment process prior to an opportunity to practice assessment as a class on a non-clinical related example, e.g. lacing a shoe. Students are then partnered up and act as both assessor and student in two OSCE stations under mock exam conditions. During this session they give feedback to their peer. The aim of the formative OSCEs is to firstly build assessment literacy for the OSCEs, encouraging students to identify as the 'assessing expert' and get a greater understanding of how a marking scheme facilitates the feedback process. In addition, it serves as a low-stakes opportunity for students to experience the OSCE examination. Students were asked as part of a post intervention evaluation 'Did attending the FOSCE class change your concerns over the forthcoming OSCE examinations'. 58% indicated it had reduced their concerns, 32% that it had increased their concerns with 10% reporting no change. Open-ended responses in the survey highlighted a greater understanding of the assessment criteria and marking process e.g.

I feel much better about OSCE's now that I've done the FOSCE class and have practiced my skills in a few sessions. I was really worried about missing details, but I realised that half of the criteria is from "putting on gloves" or selecting the "appropriate needle"



In a post formative OSCE focus group, students discussed how they felt about acting as the examiner, and became more conscious of the difficulty of acting as an examiner. They also iterated practical strategies for using one another as peer study aids.

it was really useful to see, like, from the other side. I feel like personally I was kind of willing for the other person to pass and see if they didn't do anything where they were, like, oh, like I have to say no but you really want to say yes.

Using formative OSCEs allows students to place themselves into the 'expert' assessor role in a low-stakes setting, exploring their own role in assessments and clarifying the whole assessment process more holistically.

ALPs Level 4

At level 4, the focus is on the students as peer assessors in the context of work place based assessment. The stakes become higher as this 'doing' of veterinary work is as close to the practicing vet as a veterinary school can get. In our context, much of the feedback students receive during their clinical rotations is designed to be formative in nature and is either given as part of a dialogue verbally or as typed comments into an online system. This is similar to how feedback would be delivered to independent veterinary practitioners, from peers and from clients. Truly assessment-literate veterinary students will be able to deliver appropriate feedback, and identify appropriate feedback from a range of sources, and identify this as useful even though it may not come with an associated 'grade'. At level 4, students have their last opportunity to match their self and peer-assessment to the assessment of experts. Two small scale studies investigating student perceptions and attitudes to the giving and receiving of feedback in the final year were carried out. In the first, students reported they found it easier to receive than to give feedback and furthermore that students tended to give peer feedback focussed more on personal qualities (and be highly supportive) than on specific tasks or procedures. Overall students reported they found the intervention useful:

It was very helpful knowing what my peers think about my clinical, professional and teamwork skills, as they are the ones that I work with the most and that get to really see how I perform in clinics, on a more personal level.



I think that the peer feedback worked well with [our] group given the dynamic that already existed between the group members

This latter comment highlights the need for significant support and structure around such interventions; the implication here is that it worked well because of a pre-existing positive group dynamic which may not always be the case. In a second study embedded in the context of a final year orthopaedics rotation, students participated in a one-to-one feedback session with a clinician where they were encouraged to reflect on the feedback they received from both their peers and clinicians during the rotation. In post-rotation interviews students discussed how they made use of this feedback.

Gives you a real true reflection of how you act in a professional scenario, so I'll reflect, I'll consider what they said. If they said I have good communication skills I'll think about what I've done that might have been different, or I'll discuss why I should maybe change my history styles, like I've done that on clinics ... and I've tried it and my student peers have said "oh that was better than you normally did or that wasn't as good" to try and develop yourself. So I personally reflect on it quite a lot.

As with all the other assessment literacy interventions, it is important to support students in their role as assessors and feedback-providers. This becomes increasingly challenging at the higher levels of our pyramid; especially given the often close social connections that can exist with the student community. To circumvent these challenges with peer evaluation, we encourage students to observe and be observed, to act as assessor and assessed and to give and receive feedback from several of their peers.

Future Work

In supporting students to develop their assessment literacy skills, there are implications also for faculty development. It has been shown that even in the context of the UK external examining system, there are questions about the assessment literacy of external examiners and there is no reason to expect that this variability would be any less evident across faculty in an individual University.



Outputs

Brown, Andy; Whittington, Rachel; Thomas, Emily; MacKay, Jill; Hughes, Kirsty; Rhind, Susan. (2017) Peer feedback on non-clinical skills: the student perspective. Poster Session. Vet Ed 2017 Liverpool

Rhind, MacKay, Brown, Mosley, Ryan, Hughes & Boyd. Teaching Tip. Developing Millers Pyramid to Support Students' Assessment Literacy. *Journal of Veterinary Medical Education*. In Press.

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Financial statement

This project has utilised the funding awarded to it by the PTAS adjudication committee and the Principal Investigator or School Administrator appropriate 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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