

Building Assessment Literacy Through Scaffolded Peer Review: Transforming First-Year Lab Reports into a Deeper Learning Opportunity

Abstract

This case study examines an innovative approach to first-year lab report assessment that addresses the dual challenges of developing assessment literacy and managing large cohort marking loads. Dr. Gemma Miller has developed a sophisticated scaffolded peer review system in a Level 4 Exercise Physiology module that transforms traditional lab report submissions into multi-stage learning experiences. Through a carefully designed sequence of activities including calibration exercises, structured peer review sessions, and reflective writing, students develop critical evaluation skills while developing meaningful feedback on their own work. The approach demonstrates how traditional assessment challenges can be transformed into powerful learning opportunities.

Keywords

Assessment Literacy, Peer Review, Scaffolding, Large Cohorts, Lab Reports, First-year Experience, Reflection, Calibration

The Challenge

The very first assessment of this level 4 large module faced many challenges:

- **Scale and Efficiency:** Managing meaningful assessment for 400+ students while maintaining quality feedback and reasonable staff workload
- **Assessment Literacy:** First-year students often struggle to understand marking criteria and fail to appreciate and apply feedback effectively to subsequent assignments.

- **Engagement Issues:** Students frequently ignore feedback from traditional marking, leading to repeated mistakes in later assessments
- **Learning Transition:** As the students' very first university submission, the assessment must balance support with academic rigour
- **Skills Development:** Need to prepare students for increasingly complex lab reports at Levels 5 and 6, culminating in major project work

The Innovation

Gemma has developed a multi-stage assessment system that transforms the traditional "submit and receive grade" model into an active learning process. The overall portfolio structure demonstrates sophisticated scaffolding:

- **Lab Report 1:** 12%
- **Lab Report 2:** 48%

The design deliberately balances engagement-based and performance-based assessment, recognising that first-year students need both support and challenge. The approach creates multiple opportunities for learning while maintaining academic standards through Lab Report 2. Lab Report 1 is structured as follows:

- **Stage 1: Initial Submission (6%)** Students submit their first lab report in Week 7, supported by six weeks of preparatory lectures covering lab report writing techniques. Rather than receiving traditional grades, students usually earn the full 6% simply for engaging with the process.
- **Stage 2: Calibration Quiz (2%)** During curriculum enhancement week, students complete a calibration exercise using three exemplar lab reports representing different grade boundaries (40-49%, 50-59%, and 70-79%). Using the same rubric that will assess their Lab Report 2, students must identify which exemplar represents which grade level, developing familiarity with assessment standards.
- **Stage 3: Structured Peer Review Session (2%)** Students attend a scheduled one-hour computer lab session in groups of approximately 30. Each student receives an anonymously assigned peer's lab report and, guided by facilitators, provides structured feedback using the assessment rubric. The emphasis is explicitly placed on constructive feedback and identifying strengths and improvement areas rather than accurate grading. Following peer review, students then apply the same process to their own work, developing self-assessment capabilities through comparison with the rubric and reflection on their peer review experience.

- **Stage 4: Reflective Synthesis (2%)** Students complete a 250-word reflective paragraph analysing their learning from the peer review activities and identifying specific improvements to implement in Lab Report 2. This synthesis stage consolidates learning and creates a bridge to future work.

Support Structure

The system is supported through several key elements:

- **Preparatory Lectures:** Six weekly one-hour sessions covering lab report components, methodology, analysis, and presentation standards
- **Clear Rubrics:** Consistent assessment criteria used across all activities, familiarising students with expectations
- **Facilitated Sessions:** Staff support during peer review sessions to guide discussions and address questions
- **Anonymous System:** Peer review anonymity reduces bias and encourages honest feedback
- **Flexible Participation:** Students who miss initial submission can still engage through template materials

Impact and Outcomes

- **Student Engagement:** The approach achieves remarkable engagement for a first-year, first-semester assessment:
 - Strong engagement on the full peer review process. Student response to the process: *"this is an eye opener to me and prior to this, I've never put together a report like this."*
 - High attendance at peer review sessions despite being their first university assessment experience
- **Learning Benefits:** Preliminary analysis suggests strong correlation between peer review engagement and subsequent performance
- **Staff Efficiency:** The system addresses the practical challenge of meaningful assessment at scale.

- **Assessment Literacy Development:** Students demonstrate improved understanding of:
 - Assessment criteria and standards through calibration exercises
 - Peer evaluation skills through structured review activities
 - Self-assessment capabilities through reflection and comparison

Transferability

The core principles demonstrate strong potential for adaptation across disciplines:

Scalable Elements

- **Calibration Exercises:** Exemplar-based standard setting works across subjects
- **Structured Peer Review:** Rubric-guided feedback applicable to any assessment type
- **Engagement-Based Initial Assessment:** Reduces marking load while maintaining learning value
- **Reflective Integration:** Synthesis activities enhance learning across disciplines

Adaptation Considerations

- **Exemplar Development:** Requires discipline-specific materials representing different grade boundaries
- **Facilitation Training:** Staff need preparation for guiding peer review sessions effectively
- **Rubric Design:** Assessment criteria must be clear and applicable to peer review contexts
- **Technology Infrastructure:** Canvas or equivalent platform needed for anonymous assignment and feedback collection

Success Factors

- **Clear Learning Objectives:** Students understand the purpose of each activity
- **Progressive Scaffolding:** Each stage builds on previous learning
- **Balance of Support and Challenge:** Engagement-based early stages with performance-based culmination

- **Integration with Curriculum:** Activities connect meaningfully to broader programme goals

Conclusion

This case study demonstrates how traditional assessment challenges can be transformed into powerful learning opportunities through innovative design. By reconceptualizing the first lab report as a learning vehicle rather than a grading exercise, Gemma has created a system that develops assessment literacy while managing practical constraints.

The approach particularly succeeds in making assessment criteria transparent and engaging students in understanding academic standards, addressing the common challenge where students fail to connect feedback to future assignments. The 68% engagement rate in a first-year cohort, combined with evidence of improved performance in subsequent work, suggests the model creates genuine value for student learning.

Most significantly, the innovation provides a sustainable approach to meaningful assessment at scale, offering a model for other large cohort modules seeking to balance educational effectiveness with practical efficiency. The scaffolded structure ensures that even students who engage partially still receive valuable learning experiences, while those who complete the full process develop sophisticated assessment literacy skills that support their entire academic journey.