# Teaching portfolio for Melbourne Peer Review of Teaching

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## Overview

This Teaching Portfolio has been put together for the purposes my participation in the Melbourne Peer Review of Teaching program. It is meant to summarise my teaching experiences, approaches, objectives and style. It is my hope that this Teaching Portfolio showcases the thoughtfulness and detail I consistently put into planning my subjects and the attention paid to the appropriate sequencing of lessons and tasks and frequent opportunities for formative assessment.

## Teaching responsibilities over the last 3 years

| | | |
|---|---|---|
| **2019, Sem 1** | Subject coordinator | *Biology of microorganisms* (SCI1589)<br>842 students; 1st year undergraduates; core subject |
| | Lecturer | *Principles of ecological analysis* (SCI4566)<br>175 students; 2nd year undergraduates; core subject |
| **2018, Sem 2** | Subject coordinator | *Biology of microorganisms* (SCI1589)<br>709 students; 1st year undergraduates; core subject |
| | Lecturer | *Principles of ecological analysis* (SCI4566)<br>161 students; 2nd year undergraduates; core subject |
| | Demonstrator | *Applied ecology* (SCI4565)<br>28 students; 2nd year undergraduates; elective subject |
| **2018, Sem 1** | Lecturer | *Biology of microorganisms* (SCI1589)<br>215 students; 1st year undergraduates; core subject |
| | Lecturer | *Principles of ecological analysis* (SCI4566)<br>150 students; 2nd year undergraduates; core subject |
| | Demonstrator | *Applied ecology* (SCI4565)<br>24 students; 2nd year undergraduates; elective subject |
| **2017, Sem 2** | Lecturer | *Applied ecology* (SCI4565)<br>278 students; 2nd year undergraduates; elective subject |
| | Lecturer | *Geomorphology* (SCI2272)<br>204 students; 2nd and 3rd year undergraduates; elective subject |
| **2017, Sem 1** | Lecturer | *Applied ecology* (SCI4565)<br>251 students; 2nd year undergraduates; elective subject |
| | Demonstrator | *Biology of microorganisms* (SCI1589)<br>3 groups of 20-24 students; 1st year undergraduates; core subject |
| **2016, Sem 2** | Lecturer | *Applied ecology* (SCI4565)<br>224 students; 2nd year undergraduates; elective subject |
| | Lecturer | *Geomorphology* (SCI2272)<br>196 students; 2nd and 3rd year undergraduates; elective subject |

## Teaching approaches

This section lists four teaching aims that I have prioritised in my teaching practice over the last few years.

**Teaching aim 1**: to ensure that my students can comprehensively and accurately apply the knowledge they gain in my subjects.

> Supporting effective learning by: promoting higher-order thinking skills, making sure students are adequately challenged to expand their thinking and understanding.
>
> Teaching methods to facilitate this learning: incorporating open-ended question tasks into small group work; changing some previously multiple-choice only test questions into short-answer questions; designing and including one assessment per subject that involves application of knowledge.
>
> Educational objectives: application, critical thinking, challenge

**Teaching aim 2**: to systematically and proactively monitor students' comprehension, progress, and learning gains.

> Supporting effective learning by: providing the 'checking in' required on a regular basis in order to then adjust the subject if necessary so that students do not get lost and confused; pre-emptively making sure students understand the foundations of each step before going on to the next.
>
> Teaching methods to facilitate this learning: incorporating review checks, self-assessment, and unit quizzes at specific intervals throughout the term; using analytical tools available on the LMS; including quizzes and polls in large lectures to gauge students' understanding before moving to more abstract concepts.
>
> Educational objectives: comprehension

**Teaching aim 3**: to provide frequent and comprehensive feedback of multiple varieties.

> Supporting effective learning by: helping students gauge their own learning and understand both where they stand and what they need to work on; offering different types of feedback for different purposes to make the meaning clear and thorough.
>
> Teaching methods to facilitate this learning: use of quizzes for both self-assessment and formative assessment; including both written, individualized feedback and oral group feedback on assessments; placing 'review' opportunities at regular intervals in the term.
>
> Educational objectives: self-direction, challenge

**Teaching aim 4**: to make lessons active for the students, regardless of lecture size.

> Supporting effective learning by: prompting students to think and be mentally engaged in the lectures; giving students a purpose for their learning during each lecture.
>
> Teaching methods to facilitate this learning: incorporating polling activities into large lectures; asking students questions even in large lectures; incorporating open-ended questions onto lecture slides
>
> Educational objectives: self-direction, inquiry

## Examples

The examples below demonstrate how I have worked towards the teaching aims described in the previous section. They showcase the way I have incorporated these aims into my teaching practice.

First, the sets of images below show some of the instances where I have taken an entirely multiple-choice assessment and turned some of the questions into open-response questions.

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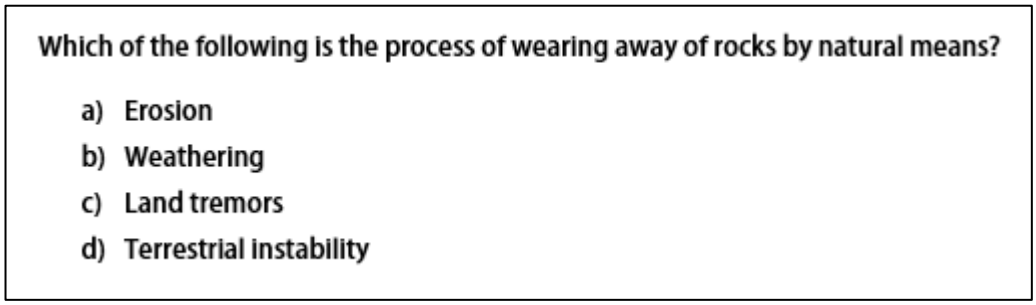


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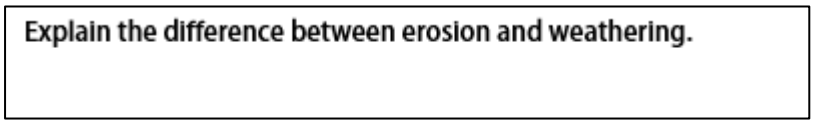


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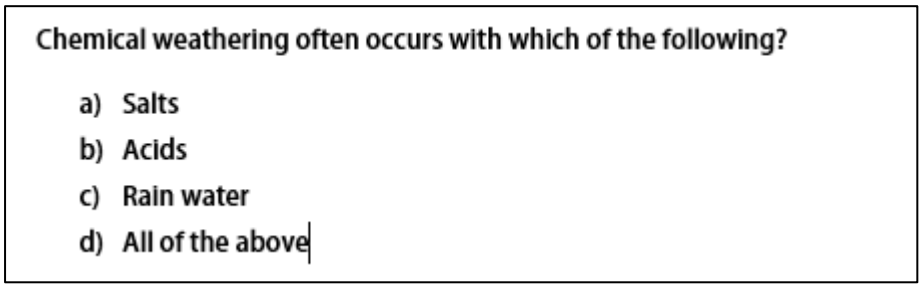


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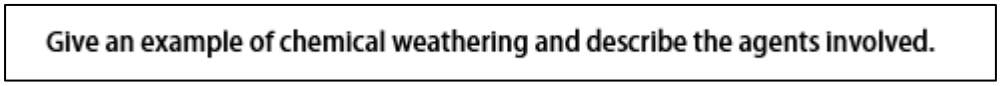
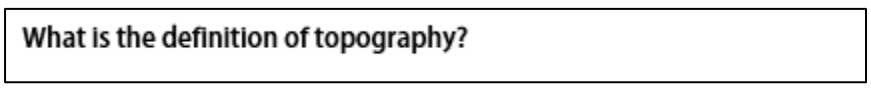



In other instances, I took a simple, but straight forward question and revised it in a way that required more comprehensive understanding of ideas and relationships between concepts. For example, from:

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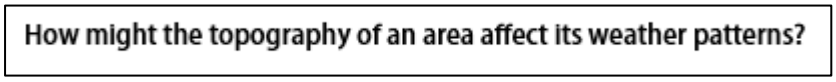
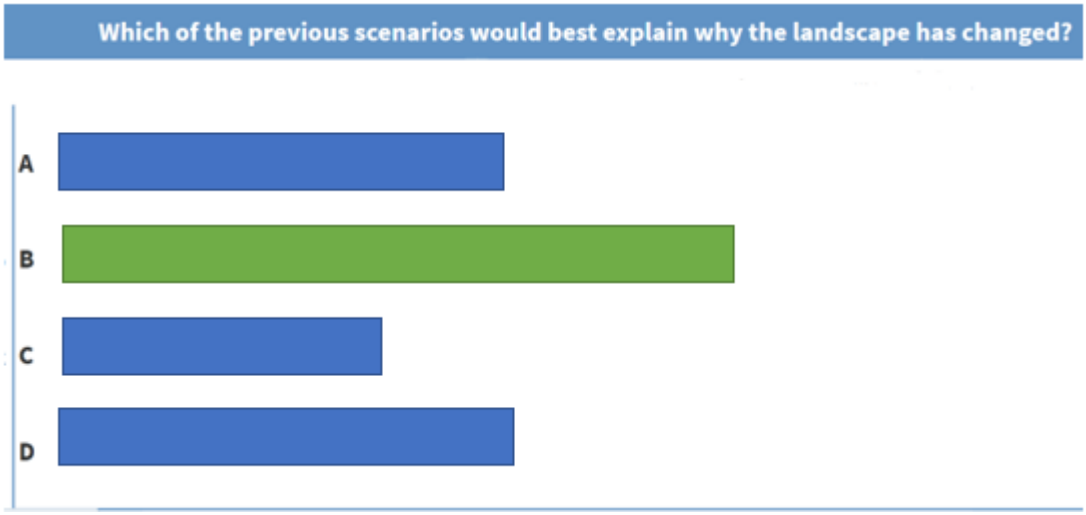


Next, I have included an example of my semester-long planning of opportunities for review, checking in, and feedback. The table below demonstrates my efforts to ensure there is opportunity for some type of feedback in every week of the semester.

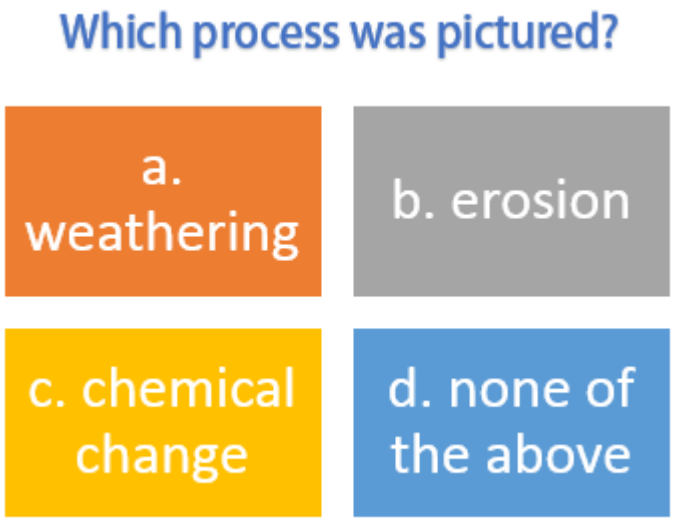
| Week | Self-assessment | Informal opportunities | Formal Assessment |
|---|---|---|---|
| 1 | LMS-discussion board reflection post | In-class review quiz (electronically) | |
| 2 | | Practice task for Assessment Task 1 | |
| 3 | | Whole-group feedback on practice; open-ended review task; discussion | |
| 4 | Self-reflection on task 1 | | Assessment Task 1 |
| 5 | | In-class check-in related to topics 1-3 | |
| 6 | Review quiz on LMS | In-class check-in related to topics 4-6 | |
| 7 | | | Mid-term quiz |
| 8 | Response analysis given from mid-term quiz with options for retaking | | |
| 9 | | Whole-class feedback on mid-term quiz | |
| 10 | Creation of peer-led feedback forms | | |
| 11 | | Peer review of task 2 draft | |
| 12 | Included self-assessment according to task 2 rubric + reflection | | Assessment Task 2 |

The third, and final, type of examples relates to my incorporation of active learning techniques, particularly in large lectures.

- Including poll questions into big lectures that also help to check students' understanding:




- Using electronic quizzes like Kahoot to encourage group collaboration, justification of answer choices, and active participation:




## Conclusion

In all of my teaching roles, I have strived to create classes where students are both engaged and challenged, regardless of the number of students in the class; however, as highlighted in this document, my primary focus has been on ensuring students have adequate support to develop a comprehensive, sound, and well-applied understanding of the material. As future scientists, their ability to consider a wide array of information and apply it appropriately will be primary.