

Addressing a Large Student Cohort's Anxieties in First-year Biology



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Teaching Context

Biology of Cells and Organisms is the biology subject offered in first semester, during the first-year of the Bachelor of Science at University of Melbourne.

Students: Almost 2,000 students enrol in the subject. Most of these students are studying a Bachelor of Science, but a small number are completing other degrees and enrol in biology as a breadth (elective) subject.

Teaching team: Associate Professor Dawn Gleeson and Dr Andrew Drinnan coordinate the subject, with support from 13 permanent part-time tutors.

Mode: 12-week semester, with optional homework tasks set in the first week. Students attend three lectures per week (delivered four times each week to accommodate the large cohort), one tutorial per week (25-27 students and one tutor per tutorial) and one lab class per fortnight (100 students and 8 lab demonstrators per lab).

Issue: Impetus for change

Dawn and her colleagues were concerned about students' transition into university life. The transition can be a daunting experience, especially in large cohorts such as the biology student cohorts. The biggest challenge for the teaching team is helping students to feel as though they are known as individuals.

Aim

To ease the transition into university for first year biology students, especially by helping them develop a sense of belonging within the course.

Subject Design strategies

Dawn and her colleagues have been working to improve the students' transition into university for over a decade. They recognise that solutions do not emerge quickly or easily, but take time to develop and evaluate. Some solutions have been successful, and some have not.

Ensuring consistency among the teaching team

Tutors are employed on an ongoing part-time basis to ensure cohesiveness and consistency among the teaching team. Modelling this to students sets the precedent for a cohesive and sharing student cohort.

Tutors are also regularly available to students outside of class hours. Their office is located near the near students' collaborative learning space, and they have rostered drop-in sessions for students seeking further support or advice. Employing tutors on permanent contract has benefits for the department in general, including:

- A teaching team that is committed to providing high quality learning activities (i.e., unlike casual tutors, they are invested in how the subject will run in the following year);
- Reduced costs associated with the recruitment, training and orientation of new cohorts of tutors each year;
- A more consistent teaching approach among tutors as they meet regularly with each other and the subject coordinator to discuss issues and share materials.

Introducing the students to all disciplines within the faculty

This year the biology teaching team ran a "Welcome Day", in collaboration with the other five schools in the Faculty (Medicine, Dentistry, Health Sciences, Population and Global Health, Psychological Science and Biomedical Science). Disciplinary experts from each school gave short presentations about their programs.

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The Welcome Day was an opportunity to expose students to the breadth of subjects offered within the faculty, and to let students meet some of the senior academic teaching team.

Encouraging students to interact in class

Out-of-class interaction has been encouraged through various initiatives (e.g., arranging informal study groups and Facebook page), but these seem to end if students don't see immediate benefits. Instead, an in-class approach has been adopted, in which teachers assign students to specific seats and ask students to work with the person sitting next to them. This forces students to meet someone new. It reduces anxiety around pairing up for activities for students who don't know anyone, provides consistency in how the class runs, and provides an informal 'buddy' system.

Addressing academic diversity with online resources

Students who have not previously studied biology can feel left behind and out-of-place from very early on in semester. To reduce these anxieties, the teaching team have developed short videos that explain various concepts of biology (aptly called "biobytes") and demonstrate procedures used in practical laboratory sessions ("tech tips"). The biobytes and tech tips are paired with online self-assessment quizzes and made available in the subjects' learning management system from orientation week. Students are encouraged to use these resources before semester begins: for new students, the resources are a source of relief and early support. For advanced students, the resources are an opportunity to build their confidence, revise, and test their knowledge at a university level.

Helping students to be proactive in addressing their special needs

Disclosure of the need for special support can be a barrier for university students, especially if the issue is related to mental health (e.g., a person with social anxiety disorder who is overwhelmed at the thought of prac work) or religious or lifestyle commitments (for example, a vegan who wishes to not dissect animals). There are two strategies that Dawn and her teaching team use in addressing this issue:

- As course coordinator, Dawn reminds students on a weekly basis to get in touch with her as soon as they can if they think they might need further support or alternative activities. These reminders appear in lectures and emailed notifications to

all students. She meets with each student who discloses that they need support, to build with them a plan of support and any alternative assessments. Meeting with students and developing appropriate plans can take a lot of time, but Dawn sees this practice as essential for encouraging students to feel confident in taking responsibility of their academic pathways and seeking help.

- The teaching team have developed an online resource that is presented as a short online quiz called "*How is uni going?*". The resource is made available to students at the mid-semester break. The resource asks students to rate from 1 to 7 how they are feeling about a range of issues at university (housing, finance, academic work, health, etc.). If students respond with a low rating, immediate feedback appears with stories from other students who have felt the same way, links to services that can help, both within the university and the wider community. This resource is now used across the faculty.

Evaluating outcomes

Dawn and her colleagues have systematic and anecdotal evidence of the success of their teaching approaches:

- They have seen an increase in their Subject Experience Survey (SES) scores over the past few years, particularly regarding the item "*I feel part of the community*". This item is of particular importance for a department concerned with improving students' sense of belonging amidst a large cohort.
- The rate of participation and positive responses in the resource "*How is uni going?*" indicated that the students were faring well mid-way through semester. When the resource was first released, findings revealed that students were not comfortable approaching the lecturers or the tutoring team. Strategies were immediately discussed for improving interactions between students and teachers, including the strategies discussed above.
- Emails to lecturers and tutors from students at the end of each semester thank the teaching team for their efforts.