Peer pressure and performance: meaningful team work

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The Bio2010 report by the US National Academy of Sciences (2003) recommends inquiry-based learning as a way of 'sharing the excitement of biology'. The report also encourages group projects and the use of current research problems. We have incorporated all these aspects into an intense course operating in the final year of our biotechnology degree. Our course is the last teaching Biotechnology students are exposed to, prior to their entering a work placement program. The goal of the course is to round off their degrees and utilize the generic skills they have acquired in a team exercise. The course is a full course but is scheduled for 5 weeks at the start of second semester. Thus it is an intense learning (and teaching) experience.

For the major assessment task the students are randomly placed in 'companies' and asked to address a problem. The problems are current biotechnological problems, predominantly in the area of reproduction. Each student has a unique role to play in the company, as well as participating in the team exercise. The intense learning experience rapidly builds teamwork. Peer pressure is seen in terms of meeting deadlines. A small peer evaluation component is used to help assess student contributions. Electronic feedback indicates that the course is well received. Students who make some contribution perform well and are aware of their contribution. There was a noticeably strong performance from students who had previously had completion issues.

References

National Academy of Sciences (2003) *Bio2010: transforming undergraduate education for future research biologists,* Washington DC, U.S.A: National Academies Press.

An investigative laboratory program in first year chemistry — experience and outcomes

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A new laboratory program in first year chemistry was introduced in 2003, initially for a class of 200 students, with the aim of fostering collaborative student-centred learning and critical thinking. In the laboratory, students worked in teams, providing input into the design of some experiments and, towards the end of session they undertook a short experimental project. At the same time, the tutorial program was redesigned in order to introduce open-ended questions or questions with no single correct answer.

The changes to the program were overwhelming successful, in that 78% of students reported the laboratory component to be either good, or the best thing about the course. While students found the new experimental approach challenging, and even frustrating at times, the tutorial modifications were less successful with 50% of students feeling that this section did not have the appropriate balance between conceptual and practical material. An important component of the change was to align the assessment with the goals of the new laboratory program. A higher proportion of marks were reallocated from lecture-based assessment to laboratory work, with some reduction in syllabus content. New assessment feedback sheets were designed to enable quality feedback to students and to enable demonstrators to provide consistent marks. This feedback mechanism has since been extended to other first year courses. The course was evaluated using an online student questionnaire, which allowed open comments, class visits and debriefing interviews with laboratory demonstrators and tutors. A number of further refinements have been identified, the most important of which are better structuring of tutorials and more support and training for demonstrators.