Student managed learning: Whales, Dolphins and Sharks

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This case study has been developed from data gathered through observations of the teaching component; interviews with the tutor; and a student focus group.

Background

This case study reports on a module designed to give students the freedom to investigate subject areas they enjoy, the responsibility to manage their own learning and a framework to reflect on that learning. Taken primarily by Marine and Freshwater Biology, and Aquatic Zoology students this final year module gives students the opportunity, in groups, to investigate in depth an aspect of the biology of whales, dolphins and/or sharks. The design of this module follows an Experiential Learning Model (Kolb, 1984) and incorporates a Writing Learning Cycle such as that described by Peat, Franklin and Taylor (2005).

Activity for module 59322 Whales, Dolphins and Sharks is centred around real life issues taken from the current scientific literature. Following an initial introduction to the module and the concept of Student Managed Learning (SML) students are asked to form groups of 5 in time for the first session. At the first session each group is presented with an issue (e.g. 'Toxic whales off the menu', from New Scientist, 6 Dec 2009) and with some guidance from the tutor each group is expected to make their own evaluation of the information presented, ask questions about the topic and set themselves targets (work to do) to enable them to better understand the issues and answer the questions they have raised. The students have three further tutor-facilitated sessions and at least one further group session convened and managed by the students themselves. Student effort is geared towards producing a written group report. Over the sessions groups adjust their plans, revisit the area(s) of focus and formulate a working title for the report. The expectation is that each student should contribute 2000 words to the report. The report is given a single (i.e. group) mark. Reports are written for two issues and together these make up 80% of the module mark.

Student reflection on their learning is the other major element of the module. Students are asked to grade their first group report and write a 500 word essay to justify their choice of mark. This contributes 10% of the module mark. Once students have received the report mark and feedback they are then asked to individually reflect on the similarities and differences between their and the tutor's rating of the work. That, combined with a self improvement action plan on how they will use the feedback, provide the final 10% of the marks. Alongside each reflective summative assessment students complete formative assessments (questionnaires) designed to be a framework to encourage them to think about the learning processes in the module, its links to other modules, and its value for lifelong learning.

Reasons for introducing this teaching method

This module came out of the tutor grasping an opportunity provided by staff changes to implement a radical teaching overhaul. The tutor became responsible for the design of a new module and saw this as an opportunity to move away from a 'traditional', passive transmission of information via lectures and laboratories to one which uses an engaging theme and an enquiry-based approach to harness students' enthusiasm and allow them to take ownership of their learning.

Lecturer perspective

The tutor has been developing the use of SML in biology throughout his career with the intention of using it as a means by which students may develop as autonomous and reflective learners (e.g. Goulder and Scott, 2009). He believes that by allowing the students to determine their own learning (in this case the knowledge to be acquired) they engage more deeply with the learning process and develop more autonomy. A group SML approach can be used to advantage to exploit the social aspects of learning and this can be further enhanced by introducing self reflection and peer observation elements.
He also holds a conviction that learning at this level should be driven by the primary literature.

The social reflection upon the value and reliability of information brought to discussion sessions in SML has enabled students to develop a more sophisticated approach to their information use. When asked, 87% of students reported that they used online journals as their primary resource, very encouraging when the observation of peers and external examiners is that use of the primary literature by undergraduates is declining.

Student perspective

The students clearly enjoy this approach to learning and the topic area: "This is what I came to university to do" was one student's comment from the focus group. Students also recognise that they are learning skills as well as subject knowledge. Effective communication was by far the most common skill flagged up in the end-of-module questionnaire with 12 (out of 20) students listing it and as you might expect working as part of a group was also mentioned (4). Three students indentified research skills, a further two analytical skills and interestingly two mentioned listening and one patience (!) suggesting that, depending on the student, there has been a development in both subject-specific and generic skills. Within the focus group the students mentioned group loyalty, a sense of working hard for the group [harder than would have on their own] so as not to let anyone down. One student, who undertakes a 35 mile drive into university, recounted how her car broke down one morning. She felt she was really missing out by not being able to attend one of the sessions; other teaching activities she could catch up on but for this "you had to be there".

There is also evidence that issues brought out during the reflective assignments are being used in other situations. Here's a quote from a student who identified the need to proof read properly as a developmental action point: "This feedback and self assessment has helped with my dissertation [another module] as I keep going through it and finding mistakes that I would not have found if I didn't have any self assessments. After graduation I know that I can improve things by looking at what I've done and how I can improve it."

Issues

As with any departure from 'the norm' a rationale needs to be provided to allay student fears and manage expectations. The students embraced the SML but it is fair to say the self assessment received a more mixed welcome. This is disappointing for such an important skill and particularly so for this module where the assignments are such that they not only help the individual students but also provide a rich data set for staff on student learning and perceptions. Currently the module is capped at 30 students, however, given sufficient space in the timetable and staff support there is no reason why it could not be extended further.

Benefits

For both the tutor and the students there is the sense that teaching/learning this way makes a refreshing change from lectures. As intended the tutor has noticed the students exhibit an increased level of ownership of their learning but there is also an increased confidence. Confidence was also highlighted by the students in the end-of-module questionnaire. The increased attendance level was a surprise and he often sees students do better than they might have been expected to on the basis of prior grades.
It is not only students who have seen a change, tellingly colleagues have seen it work and people who were previously very traditional in their teaching are now being more innovative.

Reflections

The learning and teaching practices described in this case study could be easily adopted by other institutions and tailored to particular situations. In doing so you would provide a rewarding experience for both staff and students.

References

Goulder, R . and Scott, G.W. (2009) Field Study of Plant Diversity: Extending the Whole-Class Knowledge Base through Open-Ended Learning. *Bioscience Education* **14**-1 available at www.bioscience.heacademy.ac.uk/journal/vol14/beej-14-1.aspx

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