

Fieldwork:

E-Learning Benefits The Part-Time Student

-learning teaching strategies might not seem an obvious choice for field-based modules, but they can help a part-time student get more out of their course. Fieldwork in the biosciences can be an effective way to free the learner from the straitjacket of regimented laboratory-based practical work, so introducing them to the real world of biology, the world of variability. The formulaic nature of laboratory practical work is particularly disadvantageous for part-time students as they usually have little time to explore the practical's implications with tutors or peers. Also it is desirable that practical work results in a concrete outcome, for, if students are to develop communication skills in report writing, critical analysis and presentation, there has to be some data with which to work. The drawback is, then, that students seldom appreciate the nature of biological variation, because they do not see it. This makes it difficult for them to appreciate how heritable variation is essential for evolutionary processes — the key to understanding biology. For much laboratorybased practical work variation is not easily incorporated; yet in fieldwork students can observe variation and some of its consequences, whether it be snail shell colour polymorphism or the variability of replicates when sampling populations.

For fieldwork investigations we have used computing technology to create time for the face-to-face tutor/peer interactions that are often minimal for part-time students. For example, a whole day field study measuring plant abundance in a succession generates very large amounts of data. With multiple student groups the data transfer from recording sheets and its collation can take nearly the whole of the subsequent evening teaching session. To circumvent this we used personal digital assistants to record the data directly in the field. This tactic produces a useable dataset within an hour or so, and, using bespoke software provides it in an accessible form ready for student discussion (www. bioscience.heacademy.ac.uk/ftp/events/elearn111207/ Baggott.pdf). Technology here has eliminated a painfully boring data collation exercise, so allowing students to focus on evaluation and gain a meaningful appreciation of ecological complexity and sampling variation.



The maritime plant community for which PDAs were used to collect data on plant abundance.

For part-time students there are yet other advantages of learning biology in the field: often it provides their only sustained exposure to the so-called 'hidden curriculum' of interpersonal skills and self-management of learning. Yet there is a conflict here between providing a rich, biological, learning experience and the temptation to expand activities designed to enhance the hidden curriculum. In other words, a tendency to squeeze too much into a fieldwork module, with a consequent reduction in quality of learning. In our own second-year undergraduate module, consisting of five evening sessions plus a residential six days, we have used e-learning to create more time for productive learning activity (Baggott and Rayne, 2007). Students are given two CDs of tutorial computer-based assessments: the first CD. focused on theory, before the residential portion of the course, and the second during the residential period, containing e-tutorial assessments to support the field investigations. The e-tutorials were constructed specifically to capture the 11 conditions under which assessment support student learning (Gibbs and Simpson, 2003); and student responses and performance indicate this tactic was a success. Moreover, this approach helped to develop learner self-regulation, so meeting six of the principles of Nicol and McFarland-Dick (2006): e-tutorials clarified good performance, facilitated self-assessment, delivered high-quality feedback, encouraged teacher and peer dialogue, delivered positive motivation and provided opportunities to close the 'learning gap'. One can learn a lot of biology in the field — with only a hand lens, notebook and waterproofs — but with targeted e-learning you can deliver much more.

References

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