Computers in assessment

If you are, or if you recently were, a student, how is (or was) your work assessed? Or, conversely, if you are a lecturer, what techniques do you use to assess your students? Computers have been used to help with assessment for almost as long as they have been regularly used in labs and offices. Even some of those who were, like me, students in the 1980s can remember checking boxes in simple computer-based multiple choice tests. The techniques available now are, of course, much more sophisticated, and e-assessment (as it is called) is much more widely used, particularly in schools and colleges. Used well, it can make the process of teaching and learning easier and more enjoyable for all concerned, but it can also come to be seen as a monumental waste of time.

I was surprised to learn recently that there is a yearly conference in the UK dedicated to sharing best practice in e-assessment. The tenth international computer-assisted assessment (CAA) conference was held at Loughborough University in early July. I was one of 148 delegates, including a good proportion from overseas. I admit that I am more used to research meetings (although a regular attendee at specialist education sessions) and it took a while for me to get used to some of the educational terminology, but I found it both useful and interesting. The following snapshots, some of which are specific to the life sciences, give an idea of the ways in which assessment technology is enhancing the experiences of teachers and learners alike.

Many lecturers will have heard of JISC, although they will not necessarily know that the acronym stands for the Joint Information Services Committee and that is funded from all of the UK’s further and higher education funding councils. JISC provides both advice and tools to support the use of IT in research, teaching and administration. Among other things, it provides an automatic service for detecting plagiarized work which many academics are finding extremely useful.

Lecturers who are registered with the online service TurnitinUK (www.submit.ac.uk) can submit scripts they receive to a server that promptly returns a report listing exactly which parts of the scripts appear to have been copied, and also where from. But some academics are exploring the possibilities of this service much further. Silvester Draaijer, a Dutch economics lecturer, has used the system to allow students access to each others’ work to grade it. His students, in general, found that learning to critically analyse others’ work gave them a new and valuable perspective on their own.

Moving into the life sciences arena, Malcolm Andrew, of the School of Pharmacy at Leicester, has developed an innovative, and wholly electronic, method of assessing a practical exercise in which students spend several weeks identifying a culture of an unknown bacterium. The students entered results from a battery of tests into a Web form, were given feedback, and then used that information to identify their organisms. Zero marks were given if students deviated from the expected conventions for naming bacteria; interestingly, only one student from the first cohort lost out in this way, although students who had previously submitted written reports for the same exercise had produced a wild variety of naming errors.

Computer-based education in all its forms is particularly important at the UK’s latest medical school, the Peninsula Medical School, because of the distances involved. The medical school was set up as a partnership between the universities of Exeter and Plymouth, and took its first intake of students in 2002. Pre-clinical students are based at the two universities, with some moving to Truro, Torquay and Barnstaple for clinical training. Incorporating IT into all aspects of the clinical curriculum allows all students, particularly those at the more remote locations, to benefit from the expertise of specialist staff. Sally Holden described their use of online self-assessment, based on case histories, to help students get the most from assessed tutorials in clinical pathology. Holden and her colleagues found that there was so much excellent material freely available on the Web that there was very little need to write anything new: “There’s no point in reinventing the wheel”. They made particular use of the Biology Project based at Arizona State University (http://biology.arizona.edu), a rich and useful...
bioscience resource for medics that also includes basic material for early undergraduates and school students.

Lecturers who want to program their own tests and quizzes for assessment have a large range of resources to choose from. Several companies that specialize in this type of software gave presentations at the conference, including its main sponsor, Question Mark (www.questionmark.com/).

Tools like these can produce excellent sophisticated quizzes and assessments that are engaging and straightforward for students to use. Unfortunately, they are not always as easy for (non-geek) lecturers to produce. TRIADS, an e-assessment tool produced by a consortium including the University of Derby and now marketed through Derby-based spin-out company Innovation 4 Learning (www.i4learn.co.uk/), produces excellent assessments but only via a notoriously steep learning curve.

Don Mackenzie, one of TRIADS’ main developers, introduced a new tool designed to make new users’ lives easier. QuickTRI is a simple point-and-click interface to some of TRIADS’ features; Mackenzie is looking for beta-testers.

If you are inspired to take any of this further, both JISC and the Higher Education Academy Centre for Bioscience have some useful resources (see www.jisc.ac.uk/ and www.bioscience.heacademy.ac.uk/). Or visit the conference archive at www.caaconference.com.

Dr Sansom was sponsored to attend this conference by the Centre for Distance Education at London University, for which she works part time as a Fellow. See www.cde.london.ac.uk/.

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Best of the Web

The most evocative sound of a Mediterranean holiday is the chirruping of the cicada. The song is a mating call produced only by the males. Each species has its own distinctive call and only attracts females of its own kind.

The song also serves to repel birds. Cicadas can reach 120 dB, painful to the delicate hearing of birds, and in the danger zone for human beings.

The Website of the Songs of European Singing Cicadas (www2.arnes.si/~ljpriromd3/coverpage.htm) carries oscillograms, spectrograms and frequency spectra of the songs of most of the European cicadas, together with illustrations of these large and ugly insects.

There is more: the song of each species can be played in QuickTime (and saved too, if you have the full version).

For each species, there is the calling song (and often the continuous song as well) with a full list of references. The illustration is normally of the pinned insect and a live specimen with some habitat photographs. The site is superbly put together, with a choice of English or Czech languages.

A website with a more American slant is Cicada Mania (www.cicadamania.com/cicadas/). This has the latest cicada news (sample: ‘Central Texas getting rare visit from ear-piercing giant cicada’) and reports of brood emergence (cicadas spend most of their lives underground). It also has some difficult to classify stuff such as videos of a cicada breathing and of a cicada heart beating. The site has a section on eating cicadas (a delicacy in Ancient Greece) where people swap recipes, most of them revolting. The links section is excellent and the whole site has a nice jokey feel. Of course, being a US site, you can buy T-shirts, mugs and baseball caps.

If you find yourself getting obsessed by cicadas, there is a page devoted to the periodic cicadas; the three species of Magicicada which have a synchronized life cycle, a whole year’s brood emerging after 17 years underground, and doing so in astonishing numbers (http://insects.ummz.lsa.umich.edu/fauna/michigan_cicadas/Periodical/Index.html).

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