



## First Year Biology Teaching on the Web: To Lure and Catch the Imagination of the Students

Mary Peat and Sue Franklin, School of Biological Sciences, The University of Sydney  
maryp@bio.usyd.edu.au sue@bio.usyd.edu.au

The School of Biological Sciences, at The University of Sydney, teaches first year biology to 1200 students each year, in almost every faculty on main campus, resulting in a student group with a wide range of abilities and background in biology. The teaching involves repeat lecture series, multiple concurrent laboratory sessions, and vast numbers of reports and examination papers to mark.

Computers were initially introduced to the learning environment to help students understand topics which are difficult to conceptualise and are often difficult to demonstrate in the laboratory. Currently computer-based learning modules, assessment and web-based materials are delivered in four, sixty seat laboratories (Franklin and Peat 1995). These materials are also available in a student resources room which contains ten networked computers, models, microscopes, reading materials and other resources. With an increasing use of computers in the laboratory and more materials becoming available for review and revision in the “actual” resources room, the pressure from students to open the room for much longer hours forced us to consider alternative ways of increasing their access to the materials.

The web has allowed the development of a “virtual” resources room which offers students a flexibility of use that the real resources room could never offer. Students can access materials 168 hours a week, use them at a time convenient to them and can go back to the materials as many times as they need. In the current economic climate, with students juggling university commitments with employment, and thus potentially missing some of the structured teaching and learning sessions, the existence of virtual delivery is a timely addition to our resources. Our Virtual Resources Room (VRR) is a web site which contains course materials and packages, allowing both learning and self-assessment opportunities. It also facilitates communication between staff and students via email and discussion lists. The VRR can be accessed via the First Year Biology web address ([http://fybio.bio.usyd.edu.au/FYBSOBS/FYB\\_welcome.html](http://fybio.bio.usyd.edu.au/FYBSOBS/FYB_welcome.html)), however students must log in with a User ID and Password.

The VRR presents materials in a non-confrontational, user-friendly way offering students the benefits of different learning modes, depending on their preferences, thus putting the onus on them to take responsibility for their own learning, but in a way which caters for all learning styles. In addition, all information in the VRR is searchable. For example students can search for a particular topic within a lecture. From the VRR students can jump to web sites of: The University of Sydney; The School of Biological Sciences; and First Year Biology.

### Materials available in the VRR are:

- Current timetables for all first year courses;
- Paper-based materials such as answers to homework and self test quiz questions, copies of the sample exam papers for the various courses and materials required for assignments;
- Lecture notes (posted on the web after the lecture has been given). Lecturers’ email addresses are included so the students can contact them directly if they wish;
- Computer-based learning material such as tutorials, pre-lab modules and revision modules (Franklin and Peat, 1995; Franklin, Peat, Mackay-Wood and Chambers 1996);
- Student Self-assessment Modules which enable students to take a series of formative tests and exercises aimed at helping them monitor their level of understanding of major biological concepts (Peat, Franklin and Mackay-Wood 1997);

- Interactive, web-based materials which allow students to mark, and receive feedback on, a “mock” exam which is held two thirds of the way through Semester 1; and
- Remedial materials, aimed at enhancing understanding of major topic areas, for students identified to be “at risk” by the “mock” exam.

An important innovation in the VRR is the asynchronous **communication link** with staff and other students. Students can email staff via a **CyberTutor** and ask questions about the course content and organisation. Staff check the CyberTutor email inbox and reply to any questions, or send the questions on to a more appropriate authority. A **Discussion Group** allows students to post questions, or discuss any topic with their peers. Students can either join a topic currently under discussion or start a new topic for discussion.

Students **emailed comments** on the VRR include:

- “Biology web site extremely useful and well organised”
- “You have done an absolutely fantastic job...I appreciate it very much and so no doubt do many other ‘silent’ students”
- “Overall this message is mainly to compliment the staff on an excellent set of resources and to encourage you to continue developing them”
- “In response to the idea for putting the CAL modules on line. I think it’s a wonderful idea. I can’t express how great I think that idea is...”
- “Just a note to say thanks. FYB definitely makes more of the on line resources than most other subjects”

Of the **student enquiries** in 1997:

- 35.5% were questions relating to the general content of the courses, usually on laboratory material, or concerning assignments related to laboratory experiments.
- 39% were questions related to the lecture material. The majority of these messages concerned the actual lecture content, however 20% of these messages contained positive comments about the lecture material on the “virtual” resources room site.
- 13.5% concerned information regarding exams.
- 12% were internet related questions, such as how to reference internet sites for assignments, server problems and when would material appear on the “virtual” resources room site.

## Conclusion

The launching of the Virtual Resources Room was in response to increasing student demands for greater hours of access to our Resources Room. Moving the materials onto the web is in line with The University of Sydney, Faculty of Science policy on equity of access and availability of teaching materials. Access has been greatly enhanced by the opening of student computer laboratories (one with 24 hour a day access) across the University campus. This has enabled students without home-based computers, who previously may have been disadvantaged, to have 24 hour access to the web.

## References

- Franklin S and Peat M. (1995). “The Use of Multimedia in the Teaching of First Year Biology: Learning with Technology.” Proceedings of ASCILITE Conference 1995, Melbourne.
- Franklin S, Peat M, Mackay-Wood R and Chambers D (1996). “CAL Modules in First Year Biology at the University of Sydney.” CUBE ‘96 International Conference (Computers in University Biology Education Internet Conference). <http://fybio.bio.usyd.edu.au/sobsfyb/fyb/tdg/cube96/franklin.html>
- Franklin S, Peat M and Mackay-Wood R (1997). “*Assessment using computers: the First Year Biology way*”. Proceedings of UniServe Science Computer Assessment Workshop, The University of Sydney, NSW.
- Peat M, Franklin S and Mackay-Wood R (1997). “The Development of Self-Assessment Modules: use of tailor-made templates”. Virtual CUBE 97 International Conference (Computers in University Biology Education Internet Conference). <http://www.liv.ac.uk/ctibiol/vCUBE97/home.html>