101 Training the next Generation of Biochemists - Projects, Posters and Posters

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Biochemists need the skills to function in a laboratory (i.e. planning, carrying out and interpreting experiments), being capable of reading the scientific literature, presenting data, and working in a group. In Leeds the final year of the BSc programme teaches these skills and provides up-to-date subject knowledge through lectures. In year 2 students do practicals which involve planning experiments, and explore virtual labs such as the Protein Purification programme (A.G. Booth) [www.tlsu.leeds.ac.uk/courses/ProteinLab/ProteinLab.html]. A research project forms a substantial part of the final year work. Undergraduates work individually in a lab and start by planning the project. We have carried out research on how students’ perception of science changes over the project [Int. J. Science Educ. 21, 945-956, 1999]. Finally they produce a report in the form of a scientific paper which is assessed by staff. The supervisor grades the lab performance, and there is a viva and a poster presentation. Reading the primary literature is developed in small-group sessions. It is vital to assess the skills being learned. Assessment makes them explicit and makes the students take acquiring skills seriously.

102 Medical practical classes for the 21st Century: An idea

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Medical practical teaching has historically covered fundamental biochemical principle, e.g. enzyme kinetics. Although practicals in enzyme kinetics illustrate principles, they provide little ‘added value’ over dry practicals and their relevance to medical students is questionable.

Having observed a lack of student understanding of molecular biology, we developed a new practical specifically for medical students. The students are provided with 4 DNA fragments, produced by PCR of the normal or sickle cell haemoglobin gene, which may or may not have been treated with the restriction enzyme, Dde I. The students run these through an agarose gel, which is stained in ethidium bromide and visualized by UV transillumination. Students assess the sickle cell status of each patient and answer a series of questions on PCR technique and haemoglobinopathies. It is relevant to today’s technologies and the clinical situation. Furthermore the technique extends the students’ practical skills, teaching hand to eye co-ordination and allows the students to assess their motor skills, by observing the quality of the gel they produce.

Students expressed increased positive feedback for this practical and their performance in the molecular biology component of the Foundation examination improved.