

## [P25] Computer based learning and assessment packages in genetics and cytogenetics: pedagogy and andragogy

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### HIGHER ORDER LEARNING SKILLS IN GENETICS

Tackling problems is a well-established means of teaching genetics, requiring skills of analysis and application. Difficulties can arise however in setting large numbers of similar questions; also collusion impeding learning can occur when students are left to do problems without supervision. To circumvent this we have developed a bank of genetics problems where each question has a number of equivalent variants. Use of computer-aided assessment permits the use of more innovative presentation styles. Student learning patterns will be assessed.

### KARYOTYPING IN THE CURRICULUM

Many biological degrees have karyotyping as an integral part of the curriculum. Karyotyping is an essential skill for chromosomal biologists and the usual method of teaching it involves cutting and pasting photographs. This results in much time being wasted at the expense of the learning process. KaryoLab is a computer based learning and assessment package that replaces the need for a 'wet' practical class. Opinion surveys suggest that students prefer the computer based approach and evidence shows that marks are not adversely affected although exercises take significantly less time. There is also the added bonus of portability, i.e. students can complete the exercise in a time and place of their own choosing.

### AN E-LEARNING SOLUTION TO A BIOLOGICAL PROBLEM

~10% of breeding boars have reduced fertility and, of these, ~50% have chromosome abnormalities. It would therefore be financially beneficial for the pig breeding industry to adopt chromosomal screening of boars before embarking on insemination programs. Such screening however is often thought to be only within the capabilities of highly skilled individuals. In this study we attempted to dispel this dogma by modification of the KaryoLab programme using pig chromosomes. Initial investigation has shown that users' ability to karyotype increases dramatically resulting in abnormalities being spotted in over 80% of cases post-tutorial.