

## **Challenges facing physiology educators in the 21<sup>st</sup> century**

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Physiology is a core subject in health-related curricula and in medical science programs; aspects are often incorporated into other courses. Broadly, the challenges facing those who teach physiology include issues relating to the increasing amount and complexity of subject knowledge, the different destinations and expectations of the students, the changing nature of those student cohorts, the costs and difficulties of providing modern experimental work, and the need to adopt appropriate, evidence-based educational practices.

Issues include the need for clarity in the specific and generic goals or outcomes, whether for a single unit or an entire program. Designing an explicit progression in knowledge as well as in generic and specific skills supports students. Setting limits provides clarity and avoids unnecessary duplication. Students learn in many different ways; providing a range of learning experiences helps to support them effectively. Active learning is a core aim.

Practicals pose challenges, but offer valuable opportunities for interactive group work. Skills gained include designing an experiment, obtaining, recording, analysing and presenting data in a range of different ways. Problem- or case-based studies can be used effectively within physiology, and physiologists contribute to integrated problem-based medical and other health science programs.

Well-designed information technology offers on-line learning resources, simulations and the means to design and record results for a range of experiments. IT can provide flexibility for students who increasingly need to work.

Formative assessment supports learning. Well-designed summative assessment, matched to the goals of the program, evaluates achievement in a range of essential knowledge and skills. Targeted evaluation provides helpful feedback to staff.