Development and assessment of problem-solving skills

P.J. White,[1] E. Yuriev,[1] J.L. Short,[1] J.E. McLaughlin,[2] S. Naidu[1] and I. Larson,[1] [1]Faculty of Pharmacy and Pharmaceutical Sciences, Monash University, Parkville, VIC 3052, Australia and [2]Eshelman School of Pharmacy, University of North Carolina, Chapel Hill, NC, USA.

We have been using teaching approaches to develop and assess student problem solving abilities in physiology and pharmacology. In our context, at the Faculty of Pharmacy and Pharmaceutical Sciences, Monash University, we have developed an approach involving repeated practise using novel scenarios and metacognitive strategies to solve those scenarios. Early concept mapping exercises provide the conceptual understanding and factual recall required to solve problems in physiology and pharmacology. Students tackle scenarios that become increasingly more complex and authentic, receiving peer and instructor feedback as they go. Students start using strategies that fail, often jumping straight to answers that are implausible or do not match the scenario. With practise, they learn to implement a problem-solving schema and thus achieve mastery of solving novel problems in physiology and pharmacology.