

Medical students engaging in physiology via a national quiz competition

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A challenge in undergraduate biomedical education is engaging students in active learning in the disciplines, and a number of different approaches beyond didactic lectures can effectively address this. Use of subject quizzes in Medicine where different student teams can compete against each other can potentially tap into the competitive nature of students and/or their desire to receive feedback on their learning in relation to other peers. The rapid growth of student participation in the Inter-Medical Schools Physiology Quiz (IMSPQ; Cheng and Hoe, 2016), and the experiences of staff and students there, has shown that a competitive quiz format is a popular and effective approach to engage students in the discipline of Physiology. Together with the University of NSW IMSPQ participants from 2017, and with support from the IMSPQ hosts at University of Malaya, we have established the Australian Physiology Competition (APC) that was held on March 24th 2018 at UNSW. A total of 57 students from five different universities attended the quiz, forming 15 different teams representing their respective universities. The competition format (based on the IMSPQ) consisted of an initial round of 120 True/False questions across six sub-specialities with the intention to recognise those who excelled in physiology and to rank individual student participants. These results were also used to stratify the teams into rounds for the subsequent team quiz (where student teams wrote answers on their whiteboards), which consisted of four play-off rounds, two semi-finals and one grand final round. The winning team was from the University of Sydney and was awarded a trip to compete at the IMSPQ in Malaysia in August 2018. University of Melbourne placed 2nd, followed by University of New South Wales. Assessing a broad range of students across different universities can provide some insights into possible areas of strengths and weaknesses in physiology teaching and evaluate how effective certain questions are at discriminating good and bad students. For example, neurophysiology had the highest median score (a score of 10 out of 20) while the lowest median score was in gastro-intestinal physiology (5 out of 20). Interestingly, of the 14 students who responded to a post-quiz survey, the majority cited renal or neurophysiology as the most difficult topics with a minority selecting gastrointestinal physiology as most difficult. We have analysed the distribution of questions as a function of student performance, which has enabled us to identify questions that are good and poor discriminators of student knowledge.

In summary, the inaugural Australian Physiology Competition seems to be a successful way to unite undergraduate students from different campuses and engage them further in the study of Physiology. Students responded that the Competition was a positive experience and would recommend it to student peers. We hope this develops into an annual event in the academic calendar, and we have already established plans for the 2nd national competition on 13th April 2019 (see the APC facebook page at <https://www.facebook.com/AUphysiologycomp/>). We look forward to seeing you and your students there!

Cheng HM, Hoe SZ. (2016) Update on the growth of the International Intermedical School Physiology Quiz. *Adv Physiol Educ* **40**, 198-199