Using a student-centred approach to enhance understanding of the physiology of metabolism and energy balance

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This study examined the effectiveness of modifications to a physiology laboratory class on metabolism for 2nd year occupational therapy and speech pathology students. The class was designed to create an environment in which the students could identify and address their misconceptions through interactive discussion and have an opportunity to explore and integrate information available to improve their critical thinking skills. By this process it was intended that the students would deepen their understanding of the physiological principles that underlie metabolism, integrating the knowledge they had gained in this and other elements of their course. Further, the class aimed to develop the students' skills in appraising the value of nutritional information they are exposed to and to identify the important factors which influence an individuals' metabolic needs. The design incorporated some initial questions, answered individually, a tutorial, a group-based workshop and a final discussion, which specifically included revisiting the initial questions. Care was taken to create a learning environment in which the students were comfortable to discuss their knowledge and ideas openly and confidently. Evaluation of the project, in the form of a questionnaire, showed that the students agreed that the class allowed them to recognise misconceptions, improved their understanding and increased their ability to evaluate information. The results in the end of semester summative examination were improved, with an increase of 37.7% in average marks for this topic compared to the previous cohort.