Case-based large group tutorials using KeePad audience response units to enhance diagnosis and decision-making in veterinary graduates

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Effective clinical diagnosis and decision-making is a major challenge for Veterinary graduates transitioning to professional practice. Effective training in this skill used laboratory classes, with a high teacher to student ratio[1], which are labour and cost intensive within an environment of reducing funds[2,3]. This study at Murdoch University 2013-2015, found that KeePad Audience Response Units (ARUs) were a labour and cost-effective way to teach clinical diagnosis and decision-making in large group tutorials, achieving higher student performance.

The team's research questions was: Will large group, case-based clinical diagnosis and decision-making exercises using ARUs and analytic software, improve diagnosis and decision-making capacity of veterinary graduates as measured through their final examinations? An additional aim was to develop and document the methodology for wider application.

Questions were embedded in the 2013 and 2014 graduate surveys aimed at determining perceived need for training in clinical decision making prior to clinical rotations.

Clinical case materials were incorporated with multi-response, multiple choice questions over 9 sessions timetabled outside the unit teaching timetable. Each question, while chosen for its relevance to the case, aligned to a clinical investigation standard: problem list (incorporating pathophysiology and lesion localisation), work-up, differential diagnose (incorporating diagnosis) and treatment.

The post-intervention cohort scored higher on questions relating to diagnosis and decision-making (1.8% mean increase), and the standard deviation from the mean was lower (-1.24%). This difference was more noticeable when the core content of the ARU sessions was compared to these exam question scores (mean scores 2.25% higher and standard deviation, -1.86%).

Student participation in this voluntary program was high: 64%, (n=80). Student feedback was positive, with 92% of feedback sheets (243/265) reporting that the program consolidated and improved diagnosis and decision-making.

We hope to share the teaching methodology, which uses the analytic capacity of KeePad ARUs and can be adapted across disciplines. The clinical diagnosis and decision-making approach is novel and highly adaptable to many clinical disciplines and can be shared with clinical educators should any attend.[4]

We would like to generate discussion regarding: challenges of teaching diagnosis and decision-making across vocational disciplines; experience of others using ARU analytics for teaching and measuring teaching outcomes; solutions to linking use of ARUs to performance in the target domain; contribution of ARUs and sessional feedback and reflection to agile teaching.

(References available from the team)