

**TITLE:**

Does learner metacognition in veterinary students improve in response to coaching on strategies to monitor learning?

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**ABSTRACT:** 300 word limit (when applicable, please include: purpose & background, methods, results, conclusions/discussion)

**Introduction:** Metacognition is the ability to self-assess and self-direct one's acquisition of knowledge by planning learning activities, monitor success in learning, and adjusting strategies to optimize learning. Students entering UC Davis School of Veterinary Medicine appeared to experience difficulty adapting their study methods and habits to the professional curriculum. The objectives of this study were to assist first year veterinary students at UC Davis transition to a professional curriculum, develop metacognitive skills, and cultivate lifelong learning skills.

**Methods:** A 52-item Metacognitive Awareness Inventory (MAI) was administered to veterinary students in Classes of 2021 and 2022 preceding start of Year 1 at UC Davis. Metacognition was introduced as a concept by 4<sup>th</sup> year students working as peer instructors. Students identified their preferred methods of study for categorization into posters. Eight months after the poster creation, information from the poster activity was revisited among all class years to stimulate discussion about how study methods changed. Focus groups were conducted to qualitatively assess how study skills evolved. The MAI was re-administered to Classes of 2021 and 2022 at the end of Year 1.

**Results:** As a class, students were weakest in regulation of cognition, with individuals struggling in procedural knowledge about cognition. Peer instruction was modified between years to be more formalized and introduce a Metacognition Tool. Poster sessions highlighted shifts in learning strategies across all years of the veterinary curriculum. Focus groups suggested shifts towards group learning and development of growth mindsets in some students. Re-administration of MAI showed no substantial changes in metacognition scores in the Class of 2021.

**Discussion:** Veterinary students appear to have consistent strengths and weaknesses in their learning. Study strategies evolved in many students, although collective MAI scores did not appear to change. Successful modulation of metacognition may require multifaceted and repeated interventions to change habits.