Abstract - Lucas

Innovating to replace, reduce and refine animal use in education

Globally, animals play a considerable role in educating students in agriculture, veterinary, and other science- based disciplines. However, many students and educators report feeling conflicted about the use of animals in teaching and learning. When considering the impacts on animals, even minor disturbances such as exposure to multiple unfamiliar student handlers can induce behavioural and physiological stress in animals, compromising their welfare. There are clear opportunities to use technology to replace or reduce live animal use in education, as well as to refine students' skills before they interact with live animals.

This presentation will showcase innovative technologies that achieve these goals of replacement, reduction and refinement in higher education. Examples include the use of 3D digital models to teach scientific animal welfare assessment of pigs, and virtual reality and mobile-app simulations for training in low-stress livestock handling. These digital alternatives can actively engage students in the learning process, support self- directed learning beyond the classroom, and provide opportunities to apply theory in situations with real- world relevance. Furthermore, research also shows that such tools can enhance students' motivation and interest in animal welfare, ultimately delivering benefits for students, educators and animals.

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