
'Less stress for pets at Vets': Constructing an authentic learning environment that inspires future veterinarians to incorporate animal welfare into everyday practice**OVERVIEW: SUMMARY OF CONTRIBUTION AND CONTEXT**

The importance of low stress handling (LSH) (sometimes called 'fear free') in the veterinary hospital is becoming increasingly recognised around the world.¹⁻⁴ Stressed animals undergo physiological changes, which can have adverse effects on immunity, health, and behaviour, and can delay recovery.⁵ Stressed animals can be difficult to handle, and dog/cat bites and scratches are common causes of injury in the veterinary hospital.⁶ Understanding how to handle animals in a less stressful manner benefits patients, owners, staff, and hospitals alike. **However, the principles and practicalities of LSH are not commonly taught in veterinary schools.** Through my devotion to animal well-being, I have played a leadership role in promoting animal welfare at JCU and beyond, and have used my innovative and authentic pedagogical approach to teach veterinary science (BVSc) students and staff how to incorporate LSH into everyday practice. Ensuring the next generation of veterinarians are experienced, proficient and caring will benefit pets, the profession and society, and will help fulfil JCU's and Australia's commitment to promoting animal welfare.

I am Senior lecturer in veterinary behaviour, welfare, and ethics at JCU, and I am passionate about teaching students to improve the well-being of animals receiving veterinary care. I have taught at JCU since the induction of the initial BVSc student cohort in 2007. During this tenure, I have single-handedly designed and implemented an authentic and innovative teaching portfolio in behaviour, welfare, and ethics, which is strategically implemented and integrated across all five years of the BVSc degree. In combination with my leadership in research, my pedagogical skills development has provided the platform for innovation and excellence in teaching approaches. In addition to my PhD in Veterinary Sciences (human-guide dog relationships) and a Graduate Certificate of Tertiary Teaching, I am nearing submission of a Master's in Education dissertation (dog welfare and handling in remote Indigenous communities), and I am undertaking a professional Doctorate in Education (Outcomes Measures in Veterinary Science). My scholarship further extends to supervising several post graduate students in animal behaviour and welfare, actively promoting animal welfare at numerous community events, as well as being widely published and cited in the scientific and pedagogical literature. The combination of these diverse contributions in pedagogy, teaching and research directly enriches my approaches to teaching and enhances student motivation and learning. I have received international recognition for the authentic learning environment I have constructed that inspires future veterinarians to incorporate animal welfare into everyday practice: *"Under Janice's fine tutelage, JCU are showing the world that they are a Centre for Excellence in the teaching of animal welfare"* (Kevin Stafford, Professor of Veterinary Ethology, Massey University, 2017).

CRITERION 4: INNOVATION, LEADERSHIP AND SCHOLARSHIP THAT HAS INFLUENCED AND ENHANCED LEARNING AND TEACHING AND THE STUDENT EXPERIENCE

My learning and teaching philosophy recognises that education in animal welfare is better achieved through a process of interactive communication based on a sound knowledge of evidence-based veterinary medicine. My strategy has focused on authentic and work-integrated learning: connecting what students are taught in the classroom with the issues they are likely to encounter in practice. As a result, my students have become more interested in what they are learning and more motivated to learn new concepts and skills. Learning opportunities are provided throughout Years 1-5 of the BVSc degree for students to construct their own knowledge through problem solving and critical thinking.⁷ Opportunities for reflective learning are also provided to allow students to step back from and analyse their learning experience to help them develop critical thinking skills and improve on future performance in the workplace.⁸

INNOVATION IN ANIMAL WELFARE CURRICULA

Building on my pre-clinical teaching of behaviour, welfare, and ethics in Years 1-4, I have championed novel and authentic ways of enhancing the engagement of Year 5 (final and capstone year) veterinary students in

the curricula. In Year 5, clinical behaviour is taught in small groups and is lecture-free. Students have the opportunity for hands-on tasks to support the academic learning experience and build confidence. This pedagogical approach maximises learning as students integrate and apply previous learning on the subject and these capstone experiences consolidate learning. My innovative approach to Year 5 teaching has involved students reflecting and acting on mitigating patient stress through (1) environmental enrichment (EE) to improve the pets' experience in the University hospital, and (2) encouraging patients to 'love their visits to the Vet' by participating in their own veterinary care (e.g. by willingly proffering body parts for examination) through 'clicker' training. This content and my approach to teaching it are unique amongst Australian veterinary programs.

Dogs and cats quickly learn to associate frightening or painful experiences with the hospital and staff (classical conditioning). My students learn that they can lessen these undesirable associations by training a different association with the use of a clicker (to audibly mark a desired behaviour) and food rewards. Students can train dogs to willingly place forepaws on a raised platform as part of physiotherapy treatment (Fig 1). Students also teach dogs helpful behaviours for treatment such as: 'put your nose in the muzzle', 'give me a high five' (to expose the under 'arm' area), and 'show me your bum' (for taking a temperature). Students have even trained bold cats to jump onto weighing scales — much to the clients' delight. Based on Piaget's theory of constructivism⁹, this hands-on approach reinforces learning as students gain knowledge and form meaning based upon these experiences.

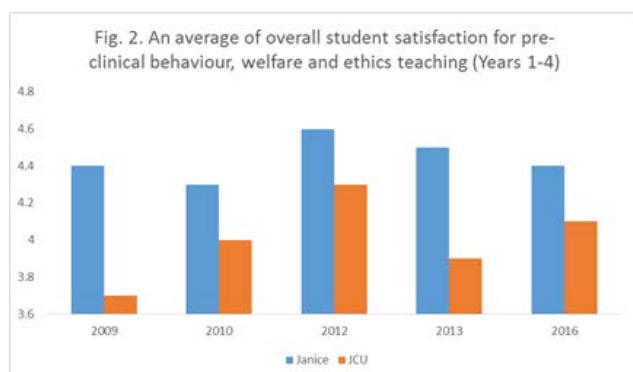


Fig. 1. Student training session.






In 2014, I led the original process of integrating patient stress mitigation into the Year 5 surgery rotation in the University hospital to provide a more holistic experience for students and to broaden the clinical relevance of their surgical skills. Authentic subject assessment requires students to design and implement steps to ensure their canine and feline patients are well cared for and to show how they have mitigated stress. Novel applications included students making disposable toys from materials available in the surgery, advising colour choices and lighting effects in the building infrastructure, redesigning the waiting room to keep cats separate from dogs, as well as simple affection and comfort. My incorporation of LSH and EE methods into clinical behaviour teaching has also been welcomed from JCU's non-academic staff. I have been working with the Veterinary nurses to incorporate student learning into everyday hospital practice. Due in part to student input, the nurses are now equipped with a Patient Handling & Care Summary to help minimise anxiety and fear through consideration of the patients' sensory environment. Examples include minimising noise, visual stimuli and odours, and incorporating relaxation techniques such as massage and aromatherapy. Judicious thought is also given to the use of anxiolytic medications. These interactions, which have better enabled nurses to mentor best practice, create a truly authentic learning environment for the students, and enhances work-integrated learning to improve their employability.^{7,8}

SUSTAINED RECOGNITION OF SUCCESS BY STUDENTS, JCU AND INDUSTRY PEERS

JCU teaching surveys indicate that student feedback on my pre-clinical teaching (Years 1-4) consistently achieves higher than average University ratings (Fig. 2). Recorded response rates ranged from 49-70% (JCU average is 28%). There is no mechanism to collect individual quantitative data on the teaching of clinical behaviour in Year 5 as it is one of several subjects taught in a 'composite' rotation, and feedback is collected for the rotation as a whole. However, qualitative student feedback on Year 5 clinical behaviour teaching has been collected since 2010 (when the first cohort of BVSc students graduated). This feedback has been consistently positive, with many students stating that their favourite subject was clinical behaviour. There have been numerous



requests to incorporate more clicker training sessions, as the students enjoyed the lessons and found them invaluable: *"I loved the behaviour component and would like to do more pracs."* (Year 5 student, 2016). A range of comments received since 2010 is shown below:

-  *Behaviour talks & case report were among the most helpful learning activities* (2010)
-  *Liked best: Relaxed, hands-on approach* (2012)
-  *Behaviour tutes and case study were most helpful to developing my competencies* (2014)
-  *The behaviour component was fun and I learnt a lot that will be practical for me in the clinic* (2015)
-  *The behaviour sessions were really good and reinforced what was taught in previous years* (2016)

Feedback from fellow JCU staff has also been highly endorsing. Dr Ruth Sutcliffe, Year 5 and Capstone Co-ordinator, stated that, *"A strength of JCU's veterinary science program is the integrated and staged instruction in animal welfare, ethics and behaviour. Dr Janice Lloyd is central to the delivery of this program. The hands-on approach and practical training is thoroughly enjoyed by students and viewed as highly beneficial for their future practice"* (2017).

The excellence of my students (and hence my teaching quality) has been independently confirmed and is best illustrated by feedback received by students who undertake electives in specialist practice; *"JCU students perform better in the external behaviour knowledge test than students from other Australasian veterinary schools"* (Year 5 student, 2016). My students' excellence in behaviour, welfare, and ethics has also been reported by an independent survey of employers of JCU graduates (JCU Employer Survey, 2013). 100% of employers felt JCU's graduates *"had a thorough knowledge of the promotion of animal health and welfare"*, 97% said graduates *"could handle and restrain animals safely and humanely"*, and 97% said graduates *"were aware of their ethical responsibilities to individual patient care"*. Graduating students also reported outstanding levels of confidence in their behaviour, welfare, and ethics knowledge and skills on the same survey questions; 100%, 98%, and 95% respectively (JCU Graduate Surveys 2010-2016, response rates 41-75%). A flood of positive commentary on the quality of JCU veterinary graduates from both employers and graduates can be found in these surveys: *"I have employed a plethora of graduates over the years. I have been in practice since 1987 and would rate JCU graduates as the very best both in terms of knowledge, confidence, presentation and skills"* (Employer of JCU graduates, 2013). *"It is always great when you hear staff from veterinary clinics praise the new graduates that come from JCU especially due to their practical approach to Day One competencies"* (JCU graduate, 2015). The excellence of my teaching quality is further shown with the awarding of a 2017 JCU Citation for Outstanding Contributions to Student Learning.

My significant leadership and innovation in teaching is evidenced in my co-recipient role on an Office for Learning and Teaching (OLT) grant for Innovation & Development in Teaching (2014-2016) (led by the University of Sydney) titled One Welfare. Community concerns and expectations around animal welfare continue to grow around the world, and require contemporary welfare practices to be taught in veterinary schools in both innovative and motivating ways. I have collaborated with colleagues from all eight veterinary schools in Australasia to produce nationally shared curriculum resources, via an on-line portal, to teach animal welfare and ethics in response to this demand. I lead the development of the aquatic animal welfare component of One Welfare, and I delivered several high profile presentations on the project including the inaugural Melbourne Academy for Veterinary Learning & Teaching symposium (2014); the Higher Education Research & Development Society of Australasia (HERDSA) QLD Branch Mini-Conference (2015); and the Education stream of the Australian Veterinary Association (AVA) and New Zealand Veterinary Association (NZVA) Pan Pacific conference (2015). In collaboration with the University of Sydney's Centre for Veterinary Education, my One Welfare colleagues and I hosted a landmark animal welfare and ethics symposium for the veterinary profession in 2015 where I spotlighted captive marine mammal welfare. Engagement in the One Welfare project not only endorses my leadership at a national level but authenticates the subjects I teach at JCU as scholarly output. I have authored/co-authored **six peer-reviewed research publications** to date, and

six peer-reviewed, original, interactive teaching scenarios (now used at JCU and other veterinary schools in Australasia) on the portal to engage students and enhance their learning experience. My teaching scenarios were described as “exceptional” by the University of Sydney’s Educational Designer, Ruth Laxton (2016).

The One Welfare project has received accolades from the academic and professional community. The original resources created by myself and the team were found to “*provide innovations in teaching and learning*” and “*created outcomes [that] demonstrate teaching at its very best*” (Professor Emeritus John Webster, University of Bristol, 2016). The OLT reviewers’ comments on the draft final report were also exceptional. “*This excellent report clearly meets the needs of all three stakeholder groups, and is in my opinion the most impressive and informative draft final OLT report that I have read during my time providing feedback on such documents. Usually I embed some suggestions for clarifications and improvements within an annotated version of the draft report, but that has proven to be unnecessary in this case. Please accept this reader’s congratulations on carrying out what has clearly been a well-designed and highly-focused project, carried out by an expert team and backed up by an impressive discipline-wide collaboration. The resulting deliverables on the One Welfare web portal should prove to be of great use within the discipline and provide an excellent example to the sector of what can be achieved within a complex but highly-valuable OLT project of this sort.*”

My leadership, scholarship and pedagogical influence in my field is further evidenced by numerous invitations to present on the teaching of animal welfare and LSH. At the 2014 QLD branch of the AVA conference my presentation² generated significant interest from delegates and many requested copies of the presentation to study and share with colleagues. In 2016, I delivered the keynote address and a workshop on canine welfare at the International Guide Dog Federation conference in Croatia. The feedback received has been very positive and the editor of the International Journal of Orientation & Mobility, Dr Desirée Gallimore, told me: “*I heard you did a brilliant key note paper at the Croatia conference. I was talking with [a delegate] today and she also enjoyed the workshop. Sounds fascinating*” (2016). A recent invited publication for the journal *Veterinary Sciences*³ on the importance of LSH and recommendations for its teaching was recognised as a seminal paper on the topic: “*This is a much-needed paper drawing out the scientific research into stress, anxiety and aggression of animals in care. The author has many references for improving patient care while considering both welfare and patient behavior. It is an essential reference article for all educators, veterinarians, and anyone else involved in veterinary medicine*” (Peer reviewer, 2017).

CONCLUSION

The AVA advocates that stress minimisation must be a standard of care. Despite this, the teaching of LSH is not commonly conducted in veterinary schools. My goal is to produce veterinary graduates with a sound knowledge of animal behaviour, welfare and ethics, and who possess unique skills in creating low stress environments for their animal patients to meet the needs of all stakeholders. There is clear evidence from students, employers and international peers that I am achieving this goal to create experienced, proficient and caring veterinarians, not just at JCU but at other universities via the One Welfare portal and teaching publications. The underlying factor in my success is the nexus between my leadership and authentic approach to teaching animal welfare, coupled with high quality student and peer feedback on learning and teaching, and scholarship to facilitate future veterinarians to become leaders in animal welfare.

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