
***Developing a sense of self and professional identity: Successfully transitioning
veterinary students through intentional curriculum design***

OVERVIEW: SUMMARY OF CONTRIBUTION AND CONTEXT

Veterinary science is a demanding and rapidly changing profession requiring educational approaches that equip students with critical cross-disciplinary competencies such as communication and problem solving skills, and emotional intelligence, as well as the knowledge and skills required by the profession¹. In 2006, James Cook University (JCU) established Australia's first 'vet school in the tropics', implementing a pioneering authentic curriculum that actively sought to respond to the challenges detailed in a government review of rural veterinary services² that specifically identified the social and emotional difficulties unique to veterinarians in rural areas. In light of this, JCU established a strong commitment to widen the participation rates of traditionally underrepresented groups in veterinary education. Consequently, JCU now has a highly diverse cohort of Veterinary Science students with a significant percentage coming from regional (32%) and remote (7%) locations and from a low socio-economic background (33%). Almost 10% of students are registered as having a disability and 49% are the first-in-family to attend university. The innovative JCU selection process allows some educationally disadvantaged students to enter the course and hence the range of tertiary entry scores is wider compared to the more established veterinary schools with, for example, 39% of students having an ATAR score of ≥ 90 .

Since 2006 our foundational commitment to support a diverse student cohort from their first year of study has been enacted through a sector-leading initiative embedding an original *Personal and Professional Development* (PPD) program that encourages both the improvement of necessary generic competencies and the strengthening of interpersonal networks, elements which are essential to enable a successful transition to university learning³. Furthermore, our integration of clinical skill development through the provision of practical experiences from the first study period represented a new way of introducing students to professional practice. This authentic introduction to veterinary practice in the first year ensures the successful transition to university studies.

Our authentic and integrated first year curriculum is informed by the scholarship of transition pedagogy³ and career development learning⁴. Through the development of two core first year veterinary science subjects—**Veterinary Professional Life 1 and 2**—our team successfully embeds a range of clinical and professional skills within the first year of the course while facilitating students to develop a sense of self and professional identity. Over the past decade, student numbers in first year have increased by 40% while outstanding student satisfaction rates and levels of achievement that greatly exceed the JCU averages have been consistently sustained. This citation outlines the curricular initiatives undertaken to achieve ongoing quality learning and success for a diverse group of students.

CRITERIA 2: DEVELOPMENT OF CURRICULA, RESOURCES OR SERVICES THAT REFLECT A COMMAND OF THE FIELD

Transition pedagogy³ underlies our teaching philosophy, which informs intentional curriculum design and student support to enhance learning and engagement across a highly diverse cohort. In addition, career development learning strategies⁴ support the development of critical skills and deep understanding of the vital personal attributes in relation to the students' chosen career. The Veterinary Professional Life (VPL) subjects provide a successful platform to facilitate students' transition into higher education and into the veterinary community by creating an engaging, inclusive, and relevant academic community for all students. Through an authentic approach to teaching and learning, students undertake real-life activities that develop comprehension of ethical practice and essential competencies for practice. To that end, our distinctive curriculum has four elements: building a professional identity, facilitating successful transition into a professional course, ensuring self-awareness, and developing early career clinical skills.

BUILDING A PROFESSIONAL IDENTITY

Our authentic and integrated curriculum, extra-curricular activities, and interaction with role models all contribute to the development of an early professional identity and skill set. Our educational approach places students as lifelong learners within the profession from the outset. The learning activities and assessment tasks are carefully designed to closely reflect the way problems are encountered by veterinarians in the field. For example, students are presented with genuine multidisciplinary case studies

that allow them to integrate essential science understanding when addressing ethical and professional issues, as well as enhance research, literacy, numeracy, and communication skills. An accreditation report noted that, *“The use of case studies (particularly during the preclinical curriculum) as a means of providing clinical context, as a vehicle for problem-based learning and as a method of providing integration between subjects appeared to be a valuable component of the program”*⁶. In addition, a four-week pig experiment where students work in teams to observe and measure the effects of different levels of nutrition on juvenile growth, and explain their effects in terms of animal physiology, provides further opportunity for integration of a range of topics and skills relevant to veterinary practice. It also reinforces the development of interpersonal and self-management skills: *“The pig growth study... really helped consolidate the content from our nutrition lectures. I found that I understood the content a lot more being able to apply it and see the results... It was awesome to actually be able to put the lecture material into practice”* (VPL2 Student feedback responses, 2013). This problem-based learning approach⁵ places students and the intended learning outcomes at the centre of the educational model and allows them to learn the skills and knowledge they will need in their future workplace: *“The case studies were very handy as they placed you in the shoes of not only the veterinarian, but forced you to also think as every social group and find solutions to work best for everyone”* (VPL1 Subject Evaluation Survey, 2014); *“The case studies caused us to learn. By doing them, I was able to take in information about topics and see what roles I may need to play as a vet”* (VPL1 Subject Evaluation Survey, 2007). Furthermore, through a series of career seminars, social events, and practitioner days, students gain a better understanding of the diversity of practice contexts and the professional skill set necessary for success. Importantly, the team’s teaching staff, invited guest speakers, community mentors, and student support officers all serve as role models for students as they begin to develop an emergent professional identity.

FACILITATING SUCCESSFUL TRANSITION INTO A PROFESSIONAL COURSE

Several support initiatives have been embedded to aid diverse students’ transition into independent learning while facilitating a sense of peer belonging. Explicit learning outcomes, with a strong focus on professional ‘Day One competencies’⁷, provide a sense of direction for both students and staff and a framework for developing learning activities, resources, and assessment. Learning support sessions focus on process rather than content, which provides students with key tools to become lifelong learners. Easy access to staff, school-specific student support officers, and an integrated small group mentor program deliver a nurturing environment for students and enable the course coordinator to actively monitor student engagement and direct at-risk students to support services. Regular staff–student meetings provide meaningful feedback for staff about the students’ learning experience. The high level of support provided to students by staff was recognised in a review of the curriculum and in student evaluation survey responses: *“The high level of commitment from academic and professional/technical staff who teach in and support the BVSc course was acknowledged as a strength”* (Sen Gupta, et al., *Review of the veterinary sciences curriculum*, JCU, 2014); *“The best aspects were the organisation and support of all the staff. The assessments were always made clear and this subject was structured well with plenty of assistance during practicals”* (VPL2, Subject Evaluation Survey, 2014); *“The first year coordinator – going above and beyond her job description to assist and provide for students, making the journey of first year of university smooth and easy”* (VPL1, Subject Evaluation Survey, 2013). In addition, data from the 2014 University Experience Survey indicated that 87% of commencing veterinary students at JCU felt a sense of belonging, either ‘quite a bit’ or ‘very much’, to their university compared to a national figure of 55%.

ENSURING SELF-AWARENESS

A critical element of the VPL subjects is the development of self-management skills. Our PPD program was the first professional skills development program of its type in veterinary education in Australia, responding directly to industry calls to strengthen graduate communication and team work skills. Our program fosters the development of interpersonal and communication skills, as well as emotional intelligence and resilience, through a series of workshops in small mentor groups with community facilitators. In Year One, the focus of the activities is on understanding teamwork and group roles, time management and conflict resolution, self, and self-care. The small group mentor program provides a breadth of opportunities for active and collaborative learning while simultaneously facilitating students’ social and academic transition into university and the discipline. Chief among the activities is the ability to reflect on their learning

experiences, allowing students to develop important insights into their strengths and weaknesses as learners and as future professionals with transitional support. The impact of the PPD program on students' self-awareness is evidenced in student evaluation survey and reflective responses: *"I already studied at Uni for 2 years before being accepted into BVSc and I truly think that if I knew the things I know now about communication and working with others, as well as my own personality and learning style before commencing my previous degree, my learning experience would have been dramatically different. I am starting to realise that self-awareness is a powerful tool"* (VPL1, PPD Reflective Report, 2011); *"The professional development classes provide techniques that can be applied in all aspects of life and give a better understanding of the necessary mind set to be a successful professional"* (VPL1, Subject Evaluation Survey, 2015); *"[PPD] workshops. At first a little sceptical, but ended up learning a lot about myself and others. Very good experience for working in groups, and being an efficient University student"* (VPL1, Subject Evaluation Survey, 2007).

This innovative program was praised within the 2010 accreditation report that stated, *"One of the strengths of the curriculum is its threads of professional life and communication skills"* (Australasian Veterinary Boards Council, Accreditation report 2010)⁶. Moreover, student satisfaction scores verify the positive role that mentor groups and PPD training has had on students' ability to work in teams. Students' perceived ability to work in teams, when determined from subject evaluation surveys (2008 to 2012), is well above the JCU average (Mean \pm SEM: 4.5 \pm 0.04 versus 3.5 \pm 0.03; P = 0.003). Internal analysis of students' emotional intelligence between Years 1 and 5 using the BarOn Emotional Quotient-Inventory (EQ-i) instrument also show a statistically significant improvement across dimensions of emotional intelligence.

DEVELOPING EARLY CAREER CLINICAL SKILLS

Previous studies⁸, as well as a stakeholders' survey completed in 2005, indicated that too little emphasis was given to the development of clinical and professional skills in traditional veterinary courses. In response, we integrated practical, hands-on learning activities in first year to enhance student engagement and build a firm foundation for students to develop skills throughout the remainder of the course. Authentic assessment practices, which include meeting mandatory safety requirements, are critical drivers of the student learning experience. For example, competence in handling a range of animals is one of the core skills that students need to develop to become successful veterinarians. Rather than assuming students will develop these skills in time, small group animal handling classes form an integral part of the VPL subjects and, as evidenced in student feedback, enhance deeper learning through concrete experience, reflection, and opportunity to try again⁹: *"By far, the best thing about this course is the immediate involvement we get to apply even just the basic things like safe animal handling. You can learn loads of theory but it doesn't really mean anything until you're able to get in and do it and at JCU we've been learning practical skills since the very beginning. The course is so interactive that I am able to enjoy what I'm doing and have fun while learning"* (UES First Year Student Response, 2013).

In 2013, the team was successful in receiving a grant to develop blended learning approaches to support student learning. This enabled the creation and introduction of video instruction of all practical procedures, including those involving animals. In 2015, complementary formative on-line quizzes were also developed. These additional resources have clearly improved student confidence and learning as evidenced by findings of a 2015 on-line survey wherein a high percentage of students strongly agreed that the videos helped them to learn more in practical classes (84%), feel more confident and prepared for practical classes (90%), and undertake revision (86%). A high percentage of students also strongly agreed that the on-line quizzes helped with preparation for practical classes (70%) and revision for the practical examination (86%). Themes that emerged from analysing students' comments included improvement in confidence, learning efficiency, understanding, and preparation for practicals and exams: *"I felt much more prepared going into a practical and felt as though I understood what was necessary"*; *"The videos provided what the notes never could, that bit more confidence needed to enter the practical sure of what was going to happen"*; *"A video allows the procedures to be viewed multiple times at leisure unlike with a demonstrator"*; *"The on-line quizzes kept me up to date every week and made studying for MSAT [exam] an absolute breeze"*; *"The videos gave us an awesome revision source for when we're having trouble remembering everything we covered"* (VPL2, on-line survey 2015). In addition, interactions with the learning management system (subject accessions, interactions and duration of interactions) increased significantly and were all found to

be positively correlated to student grades in both 2014 and 2015 ($P < 0.01$), with an improvement observed in GPA scores between 2014 and 2015 (5.2 ± 0.11 versus 6.1 ± 0.07 , respectively; $P < 0.001$).

PERFORMANCE INDICATORS INDICATE SUPPORT QUALITY LEARNING AND STUDENT ENGAGEMENT

Our authentic first year curriculum reflects a strong command of the field and has gained wide recognition including the award of a *JCU Citation for Outstanding Contribution to Student Learning* for the program in



Figure 1: Subject Evaluation Survey Results VPL1 and VPL2 vs JCU Average 2008-2015 (average response rate: 26.7%).



Figure 2: Percentage satisfied for commencing JCU veterinary students vs Australian vet sector Average 2012-2015 (^{ab} $P < 0.001$; ^{cd} $P < 0.05$; ^{ef} $P < 0.10$).¹⁶

program as fostering professional and interpersonal skills, student engagement and transition, and the development of a robust professional identity among diverse students.

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