Cultural Competence is Everyone's Business: Embedding Cultural Competence in Curriculum Frameworks to Advance Veterinary Education

Jaime Gongora ■ Ingrid van Gelderen ■ Meg Vost ■ Sanaa Zaki ■ Stewart Sutherland ■ Matthew Pye ■ Anne Quain ■ Rosanne Taylor

ABSTRACT

Cultural competence in professional and research practice is important to effectively deliver animal and One Health services and programs. Veterinarians work with culturally and linguistically diverse teams, clients, and communities. Cultural perspectives on the significance and perceptions of animals and differences in consultation and engagement protocols and strategies can influence client–practitioner and researcher–community relationships, impacting animal health, welfare, and/or research outcomes. Curricula have been proposed to build cultural capacity in graduates, but these have not been reported in veterinary programs, and early attempts to integrate cultural competency into the University of Sydney veterinary curriculum lacked a formal structure and were *ad hoc* with respect to implementation. To address this, the authors introduced a broad curriculum framework into the University of Sydney veterinary program, which defines cultural competence, perceptions of animals, effective communication, and community engagement in a range of contexts. Cultural competency learning outcomes were described for units of study. These were contextually relevant and aligned to course learning outcomes and University of Sydney graduate qualities. Constructive alignment was achieved by linking learning outcomes to teaching and learning activities and assessment. The continuum of cultural competency underpinned mapping of cultural competency across the curriculum with staged, vertical integration of key principles. Additionally, action to engage staff, students, and stakeholders in a cultural competence agenda assisted in sustaining curriculum change. The result was integration of cultural competency across the curriculum aligning with recommendations from accrediting bodies and with best practice models in medicine, nursing, and allied health programs.

Key words: cultural competence, curricular design, learning outcomes, professional practice, cultural diversity, reflective practice

INTRODUCTION

The Growing Importance of Cultural Competence

There is growing national and international recognition of the importance of cultural competence (CC) and capacity in education, professional practice, and community work and its role in helping to facilitate development of relationships and creation of opportunities to work collaboratively and respectfully with groups from diverse cultural and linguistic backgrounds, including Aboriginal and Torres Strait Islander Peoples.[1–3] At this stage, detailed curricula frameworks for veterinary CC have not been described or evaluated, although international and local veterinary accreditation bodies and associations have recommended that cultural awareness, CC, and diversity competence should be core graduate qualities in veterinary education and standards.[4–8]

Medicine, nursing, and allied health disciplines have developed best practice approaches in CC in professional practice.[9–12] Models of CC proposed for the health education and provider sectors include cultural awareness, cultural knowledge, and cultural skills/behavior.[13] The curriculum design described in this article is modeled on best practices from other disciplines. However, a key influence on veterinary practice is diversity of cultural norms around animals, and animal use, as a source of companionship, food, entertainment, and/or religious/cultural significance. A tailored approach is required for disciplines including veterinary science, where there is an added dimension of animals and the human–animal bond (non-human kinship relationship, traditional practices involving animals, and significance of animals in spirituality, cosmovisions, and dreaming stories) in the practitioner–client interface. Moreover, in interdisciplinary environments, veterinarians increasingly approach animal health, welfare, production, and conservation issues with a One Health perspective, recognizing the interrelationships between human, animal, and ecosystem health and well-being.[14,15]

Opportunities to embed CC into curriculum at the University of Sydney started with the adoption of the Aboriginal and Torres Strait Islander Integrated Strategy (2012), which established the principles to build capability in a culturally competent way. The University of Sydney identified a need to improve educational opportunities for Aboriginal and Torres Strait Islander students, and this was formally articulated in overarching strategic plans. In 2012, this was the background against which the veterinary school reflected on how CC was integrated in its curriculum. Prior to this time, there were opportune and practical approaches to the inclusion of CC in the veterinary curriculum at the University of Sydney. However, formal inclusion of CC was *ad hoc*, with occasional guest speakers invited and the underpinning theory of the CC continuum model not addressed. The curriculum intiative presented in this article commenced in 2012, and its evaluation represents 5–6 years' experience with the implemented curriculum. Since 2018, a broader vision of CC has been adopted by the University of Sydney to embed CC as a core graduate quality for all academic programs (see https://www.sydney.edu.au/students/graduate-qualities.html). Current strategic initiatives

continue to emphasize the importance of CC in the curriculum, acknowledging that while there is greater Aboriginal and Torres Strait Islander participation, inequalities need to be addressed on an ongoing basis.[16] In the veterinary education context, CC is one of the competencies in the 2018 Competency-Based Veterinary Education model and the accreditation guidelines by the Association of American Veterinary Medical Colleges[5] and American Veterinary Medical Association.[7] This encourages veterinary education that promotes an understanding of CC and how this can impact on veterinary practice.

In Western countries, veterinary students interact with clients representing the richness and diversity of pluralistic societies. Australia is a culturally, demographically, and linguistically diverse country: 26% of people were born overseas; more than 21% speak a language other than English at home; 2.8% are Aboriginal and Torres Strait Islander; and religious and secular spiritual groups are highly diverse.[17] These facts pose challenges and opportunities for veterinarians, especially as Australia has one of the highest rates of pet ownership in the world (69% of households for approximately 30.4 million pets).[18,19] Globally, CC is an essential skill for veterinary professionals if they are to remain relevant and effective when communicating with teams, communities, and clients. Effective communication contributes to the development of trust and improved client adherence, which in turn enhances animal health outcomes.[20–22] This is pertinent for veterinary professionals in countries such as Australia and the US, who service culturally diverse communities[20,22] and where, as reported in the US Bureau of Labour Statistics, that diversity is not reflected in the profession.[23,24] In Australia, critical reviews of higher education, including the 2008 Bradley Review of Higher Education,[1] the 2011 National Best Practice Framework for Indigenous Cultural Competency,[3] the 2011 Guiding Principles for Developing Indigenous Cultural Competency,[2] and the University of Sydney Aboriginal and Torres Strait Islander Strategy,[25] have identified that integrating CC into curricula more broadly is essential to improve students' and all Australians' oppportunities and capacity to interact effectively and respectfully with Aboriginal and Torres Strait Islander Peoples. The need to prepare veterinary students to interact and engage effectively with culturally and linguistically diverse clients and communities during their professional practice and research in Australia and overseas was one of the mains reasons that CC was embedded into the veterinary curriculum, as presented in this article.

Here, we report on the quest to service these social realities, starting in 2012, when we first defined CC and then designed the rationale, learning outcomes, content, and pedagogy to embed CC into the curriculum of the combined Bachelor of Veterinary Biology (BVB) and the first 3 years of the Doctor of Veterinary Medicine (DVM) degrees at the Sydney School of Veterinary Science (SSVS). The combined BVB/DVM program is 6 years: BVB is 2 years of undergraduate study; students then transition to the 4-year DVM post-graduate program of study if they are eligible to do so. Alternative graduate entry to the DVM program is also an option. The final lecture-free year of the DVM program is spent undertaking a series of clinical and non-clinical (industry and community) rotations at various placement sites. Further, we developed a strategy to engage SSVS staff and leadership in a CC agenda to sustain these curricula changes and create a more inclusive environment on campus. We implemented a whole curriculum approach with vertical alignment following a CC continuum contextualized to veterinary professional practice. Model frameworks for teaching CC in veterinary and medical degree programs need to be grounded in an approach that raises students' awareness of their own cultural biases and prejudices, of societal norms and beliefs, and of the social context in which specific groups live.[20,26,27] As such, our approach in designing the program at SSVS introduces students to awareness and principles of CC, which is then scaffolded to encourage more complex levels of CC where students enhance their ability to reflect on the impact of cultural belief systems present in themselves, and in those they interact with, during their professional practice across different cultural environments, diverse social groups, diverse genders, and intercultural settings. The key to our model's success was the institutional support, the curriculum design based on specific needs of veterinary education, and staff engagement and development.

Defining CC and Setting the Approach

An overarching definition of CC was advanced based on previously published concepts.[21,28–30] CC was defined in a veterinary context as a graduate quality (Figure 1), and this informed the learning outcomes at each level of the degree as well as the units of study that were best suited to house the content (learning activities and assessment).

A 2-year stakeholder consultation process (meetings and workshops with colleagues from the centers for CC in Australia and the United States, benchmarking with other veterinary schools and discussions with Aboriginal and culturally and linguistic diverse people) during the design phase for the BVB and DVM programs facilitated the identification of guiding principles. These included the following: (a) following the continuum of CC and including other dimensions such as diversity competence; (b) using a reflective and tailored approach to engage students; (c) making learning outcomes evident and assessable across the degree program; (d) focusing on a curriculum that is relevant and linked to the veterinary profession; (e) embedding CC vertically across the program; and (f) integrating CC into the broader veterinary curriculum. Our model sought to address the complex dimensions of CC that involve values, behaviors, historical aspects, and other determinants of health and well-being, as well as positive outcomes for clients and communities. Thus, a road map of learning outcomes (see Supplementary Figure 1) corresponding to 27 sessions of face-to-face teaching, tutorials, and self-directed work across seven units of study was designed. These CC learning outcomes show considerable synergy with CC principles and core qualities recommended by Universities Australia[2,3] and veterinary accreditation and associations[4,5,6] and standards[8,31,32] (see Supplementary Table 1).

Teaching of cultural awareness started in the pre-veterinary (BVB) units of study with particular emphasis on Aboriginal and Torres Strait Islander cultures. CC and other levels of cultural capacity were then developed through years 1 to 3 of the DVM program. Notably, the ways of knowing and doing by Aboriginal and Torres Strait Islander cultures were highlighted to enhance students' understanding of how Indigenous Peoples are connected to country, the environment, and animals. In addition, we provided opportunities to increase awareness of the history and perspectives of Aboriginal and Torres Strait Islander Peoples beyond animals, including the impact of dispossession, exclusion, and inequity on intergenerational trauma.[33] Our rationale was that this, together with learning from experiences and principles developed by others in this field,[34,35] was critical in contributing to a better climate and environment that celebrates and recognizes Indigenous cultures as a first step toward decolonizing[36]
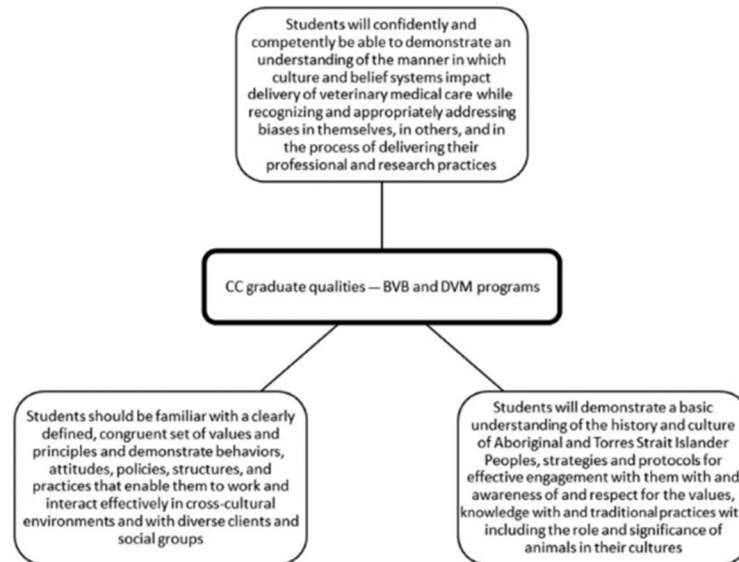
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Students will confidently and competently be able to demonstrate an understanding of the manner in which culture and belief systems impact delivery of veterinary medical care while recognizing and appropriately addressing biases in themselves, in others, and in the process of delivering their professional and research practices

CC graduate qualities — BVB and DVM programs

Students should be familiar with a clearly defined, congruent set of values and principles and demonstrate behaviors, attitudes, policies, structures, and practices that enable them to work and interact effectively in cross-cultural environments and with diverse clients and social groups

Students will demonstrate a basic understanding of the history and culture of Aboriginal and Torres Strait Islander Peoples, strategies and protocols for effective engagement with them with and awareness of and respect for the values, knowledge with and traditional practices with including the role and significance of animals in their cultures

Figure 1: Cultural competence graduate quality embedded in the curriculum of the veterinary programs at the Sydney School of Veterinary Science, University of Sydney

CC = cultural compentence; BVB = Bachelor of Veterinary Biology; DVM = Doctor of Veterinary Medicine

the veterinary curriculum in an Australian context. Our model was designed to equip BVB/DVM students with knowledge and skills to enhance their CC capacity as professionals and to support them to face the CC aspects of clinical and non-clinical rotations during year 4 of the DVM program.

Constructive Alignment

CC learning outcomes were framed and mapped (Supplementary Figure 1) for constructive alignment, taking students through learning activities to engage both the cognitive and affective domains.[37–39] This included understanding principles of CC and their applications to approaching real and simulated case scenarios. Case scenarios included triggers to stimulate students to reflect on the impact of culture on the human–animal bond, as well as unconscious biases operating during interactions with clients and communities across cultural settings and diverse social, ethnic, and gender groups. Constructive alignment was achieved by mapping specific CC learning outcomes to learning activities within the relevant units of study, which were assessed through reflection on case scenarios that required application of CC principles.

Curriculum content was based on an adapted CC continuum (Figure 2) that progresses from cultural awareness, cultural knowledge, and cultural sensitivity to cultural competence.[21,28–30] It was presented as a dynamic process in which stages can vary depending on the circumstances and context for each situation. Further, it was enhanced by considering varying dimensions of cultural capacity as described by Gongora et al.[40] The overarching pedagogical approach taken was a constructivism approach (student-focused, not teacher-focused), where the teacher acted as facilitator rather than expert, to enable students to come up

with their own perspectives through discussion, engagement with resources, and critical reflection. To achieve this pedagogical approach, a repertoire of teaching and learning methods were considered necessary to accommodate and engage the diverse international and local student cohort of the BVB and DVM programs at SSVS.

Our vision of the CC curriculum was one that extended beyond simply raising an awareness of CC principles and concepts. The curriculum was designed to engage students in developing and practicing culturally competent skills, behaviors, and values. Diverse pedagogical approaches (Supplementary Table 2), including problem-based, collaborative, and reflective learning, were designed to foster transformational learning. Critical reflection on the dominant culture was supported in ways that would give students the opportunity to shift and develop perspectives on closely held views on other identity issues such as gender, race, ability, and class. Consistent with Greenhill's recommendations,[20] the teaching of CC at SSVS involves integration within multiple units across the degree using a variety of teaching and learning strategies. Toward completing a unit of study at the University of Sydney, students are invited to provide feedback through anonymous surveys; results from these surveys have been used to plan minor developments and changes to curriculum content, delivery, and assessment of CC principles and concepts over time. Additionally, the CC curriculum was reviewed and developed after consideration of student survey feedback sought for research evaluating the CC station developed for the immersive One Health field trip; this is elaborated on in the next section describing curriculum elements.[41]
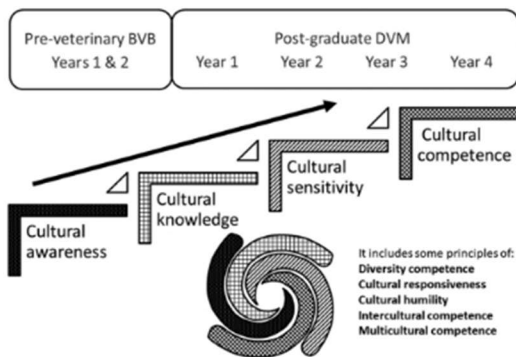
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Figure 2: Curriculum flow and cultural diversity dimensions used to implement the current work in the BVB and DVM programs

BVB = Bachelor of Veterinary Biology; DVM = Doctor of Veterinary Medicine

Note: The spiral denotes the dynamic interactions and movements of the different stages and dimensions of cultural competence and of cultural capacity.

Curriculum Elements

Pre-Veterinary Units of Study

Awareness of Indigenous cultures, practices, and knowledges were embedded into three core and elective units of study of BVB: Concepts of Animal Management (AVBS1002), Life and Evolution (BIOL1006/BIOL1906), and Australian Wildlife Biology (BIOL2032). Topics included use of animals across cultures, non-human kin relationships and totems in Indigenous cultures, and Indigenous knowledges on biodiversity and enviroment.[42,43] Teaching of Aboriginal themes and development of teaching resources were supported and/or delivered by Aboriginal knowledge holders, including smoking ceremonies, welcome and acknowledgment to country to show respect for Traditional Owners, and cultural performances and workshops related to the presence and significance of animals in Aboriginal dance, songs, paintings, and storytelling. More recently, we incorporated a reflective exercise using the Warburton Arts and Knowledge Portal (https://indigenous-knowledges.sydney.edu.au/) developed by the Ngaanyatjarra People and the University of Sydney, which consists of artworks and their related stories, so that students have the opportunity to reflect on the culture, connection to country, and knowledge of Indigenous Peoples related to animals and the environment.

DVM

The Veterinary Professional 1 (VETS6101)—CC was introduced to DVM students as part of a One Health field trip activity.[41] In this activity, students rotate through five learning stations with one focused on the impact of bias and CC in the profession. Students engage in individual and group reflections on their own and others' perceptions of animals and the significance of this when interacting with clients; pre-recorded interviews with people from diverse cultural heritages—Australian Indigenous, Muslim, African, and Chinese descent, as well as an Australian farmer—are used. We fostered a perspective that equal opportunity and inclusion form a crucial foundation for cultural diversity and that power and the history of inequality and injustice have been or can be

implemented through the dominant culture rather than taking an assimilationist perspective that promotes cultural pluralism and encompasses and defines difference only where it is useful for corporate purposes.[44,45] Subsequently, student-centered teaching and learning activities, including a speed socialization activity, encouraged students to reflect on their own culture, cultural diversity, and CC continuum models and the importance of CC in the veterinary profession (Supplementary Table 3).

The Veterinary Professional 2 (VETS6201)—The focus of CC in this unit was on principles of effective communication across diverse cultural environments and social groups, as well as strategies to deal with tensions between intention and the impact of questions in different cultural settings.[11,12,46–48] Various case scenarios utilizing effective communication with individuals from a range of diverse cultural backgrounds were presented, and students were required to identify the challenges and/or misunderstandings involved and propose alternative scenarios based on the knowledge and skills developed so far in relation to a best practice communication to minimize the impact of those challenges or misunderstandings (Supplementary Table 4).

Guest speaker presentations from Indigenous, Muslim, Chinese, Jewish, and Lesbian, Gay, Bisexual, Transgender, Gender Diverse, Intersex and Queer (LGBTIQ+) communities as well as deaf groups showcased how culturally appropriate communication can occur between individuals from different cultural backgrounds.

Veterinary Practice Management (VETS6308)—The focus of CC in this unit was the critical evaluation of case studies from a practice management perspective and the application of effective communication, ethical behavior, and CC to promote animal welfare and client adherence. Exemplar case studies were designed to encourage students to self-reflect on conscious and unconscious biases and power imbalances between practitioner and client and ways of managing these challenges. For example, one case focused on shelter practice, veterinary euthanasia, and cultural influences in environments where Buddhist principles on euthanasia are predominant. This case raised the issue of a non-Buddhist veterinarian's capacity to practice and interact effectively with clients who may have different beliefs around euthanasia and different perspectives on what constitutes best practice in animal welfare and in the work environment. Further, students were required to develop and analyze their own veterinary practice case study and then evaluate and apply processes and behavior critical to working effectively in diverse veterinary contexts.

Research and Enquiry 1B (VETS6107)—The focus in this unit was on the relevance and practice of CC in research practice[49,50] and community-based work. This unit began with reflection on the cross-cultural significance of animals and engaged students through online Aboriginal Kinship Modules (https://www.sydney.edu.au/about-us/vision-and-values/our-aboriginal-and-torres-strait-islander-community/kinship-module/learning-module.html), which cover the systems of societal organization that traditionally govern Aboriginal societies. Particular attention was given to the complexity of totems and skin names and how these are related to animals and the responsibility to care for them and their environment. Students were introduced to general aspects of the ethical and working guidelines[51–53] and history of dispossession, trauma, Sorry Business, gender roles, non-human kinship relationships, and ethical guidelines when undertaking research in Indigenous communities. This was facilitated by Aboriginal and Torres Strait Islander guest speakers.

Subsequently, students were also introduced to the minimum tool kit for CC in research and community work (Figure 3), which
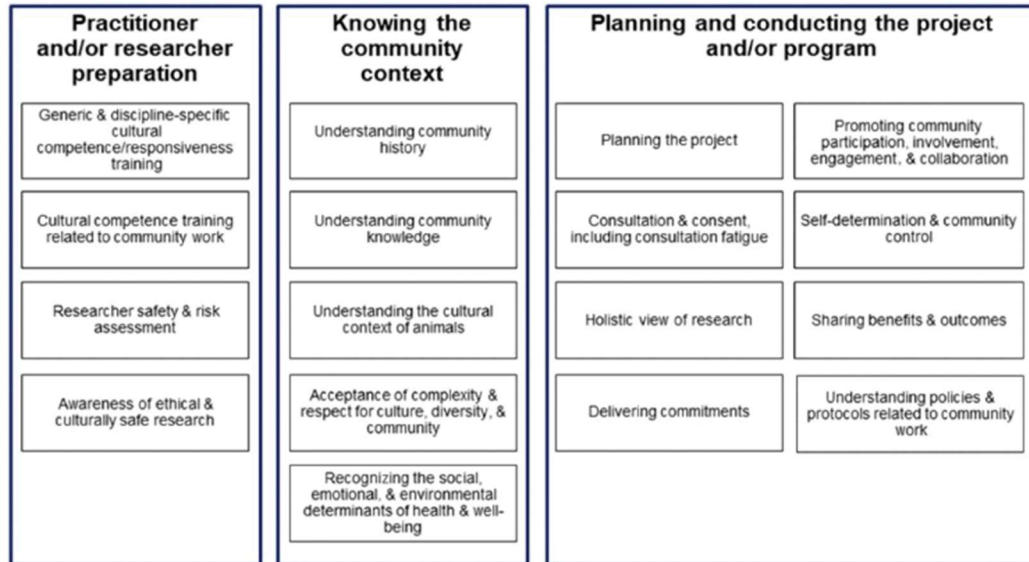
Practitioner and/or researcher preparation	Knowing the community context	Planning and conducting the project and/or program	
Generic & discipline-specific cultural competence/responsiveness training	Understanding community history	Planning the project	Promoting community participation, involvement, engagement, & collaboration
Cultural competence training related to community work	Understanding community knowledge	Consultation & consent, including consultation fatigue	Self-determination & community control
Researcher safety & risk assessment	Understanding the cultural context of animals	Holistic view of research	Sharing benefits & outcomes
Awareness of ethical & culturally safe research	Acceptance of complexity & respect for culture, diversity, & community	Delivering commitments	Understanding policies & protocols related to community work
	Recognizing the social, emotional, & environmental determinants of health & well-being		

Figure 3: Minimum tool kit for cultural competence—a checklist for planning and implementing research and/or community-based programs

is designed to support their preparation for planned external placement experiences in years 3 and 4 in the DVM program. The tool kit was developed from experiences and research in community-based work by the authors and existing resources, including the Community Tool Box developed by the University of Kansas (https://ctb.ku.edu/en/table-of-contents/culture/cultural-competence). Use of this tool kit was showcased during lectures on research undertaken by academics in cross-cultural settings related to roaming dogs in remote Indigenous communities in Australia, a One Health program around chickens in Sub-Saharan Africa, and a capacity-building program about training ex-combatants and remote communities in biodiversity inventories in Colombia. Students are expected to use the tool kit in their evaluation of their planned future external rotations in the DVM program.

Animal Management Systems 2 (VETS6205)—Case studies on animal husbandry and management in rural and remote Australia and overseas were used for students to reflect on CC opportunities and challenges. This included human perceptions and implications in management of a conservation program of antelopes and husbandry of camels in the Middle East, animal health in Australian remote Indigenous communities, human–crocodile conflict in northern Australia, and management of captive peccaries in the Americas.

DISCUSSION

Mobilizing the CC Curriculum
We aimed to engage SSVS and the University of Sydney in a CC agenda to support and sustain its inclusion in the curriculum and contribute to a campus climate that fosters diversity and inclusion beyond the classroom. Along with the curriculum development, we implemented a comprehensive program of

more than 35 initiatives to engage SSVS in a CC agenda supported by the University of Sydney Deputy Vice-Chancellor's (Indigenous Strategy and Services) Office.

To increase awareness and celebrate Indigenous cultures among staff and students, an annual Indigenous seminar series about animal health and CC in Indigenous communities was organized and delivered from 2012 to 2019 (https://www.cve.edu.au/Web/Resources/Video_Library/Web/Resources/Video_Library.aspx?hkey=4c7a7f5f-38d8-47c6-8cc0-e2120a5c1f97), which has been paused due to COVID-19 restrictions. This was attended by nearly 2,500 staff and students. To further enhance CC capacity in SSVS, a series of professional development activities were introduced. These included completing the internal, online CC modules developed by the University of Sydney National Centre for Cultural Competence (https://www.sydney.edu.au/nccc/) and the Aboriginal Kinship Module to increase awareness of and reflection on CC, bias, racism, and inclusion, as well as to increase awareness of Aboriginal cultures. Staff who completed these modules were invited to a cultural immersion extension with Sydney Aboriginal Peoples to further increase their understanding of cultures at a local level. Academics and professional staff interested in embedding CC into curriculum were provided with further CC training opportunities.

We considered that promoting a climate of inclusion and celebration of Indigenous cultures was important to allow students and staff to see coherence across the values we embedded in curriculum and those fostered beyond the classroom. Initiatives included incorporating Aboriginal paintings into teaching spaces related to animal stories, having Aboriginal smoking ceremonies in major events, and encouraging staff to include an acknowledgment of country in their email communications. Other initiatives included outreach programs for Aboriginal and Torres Strait Islander high school students and targeted support/mentoring

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to encourage SSVS Aboriginal and Torres Strait Islander students to enhance their leadership, academic, and research capacity and professional networking through workshops, meetings, social events, and celebration of their journeys.

Outcomes

The explicit integration of CC into the veterinary curriculum was a direct result of the broader CC agenda at SSVS. Triggered by the University of Sydney's strategic directions and supported by the establishment of an Indigenous portfolio and the National Centre for Cultural Competence, the staff at SSVS were well supported in their pursuit of curriculum change. In the early stages of curriculum review, benchmarking with other veterinary schools revealed a paucity of structured, sustainable frameworks for integrating CC in veterinary education programs. Previous attempts to teach CC in the SSVS were *ad hoc* and unsustainable; consideration of best practices in medical and health care education guided the approach reported in this article.[54–56]

The veterinary programs at the SSVS now embed, across seven units of study, diverse dimensions of cultural capacity, with an emphasis on CC and some elements of intercultural competence and cultural humility. This vertical integration of principles of theory and practice into the broader veterinary curriculum addresses some of the recommendations by the international and local accreditation and association bodies for veterinary education.[4–6,8] This work is a practical example of how to develop important non-technical skills in veterinary students and graduates so they are in a better position to engage effectively and respectfully with the global and local context of their professional practice, including in animal conservation, program management, and community development.[21,57–59]

An institutional culture that supports the formal and structured inclusion of CC in the veterinary curriculum is critical in assuring that learning outcomes are met.[20] The approach at SSVS is consistent with the discourse in the United States, which suggests that inclusion of the educational, philosophical, spiritual, historical, and cultural contexts of Indigenous Peoples are important factors to provide more culturally competent services and may increase the interest of those potential Indigenous students in seeking careers as veterinarians.[60] The SSVS curriculum model is designed to have a positive impact in fostering inclusive and diverse classroom environments, including the retention of, and satisfactory progression by, Indigenous students.[61,62]

The current curriculum at SSVS fosters culturally mixed group discussions in classroom activities to encourage students to engage in and develop relationships in cross-cultural environments and face cultural challenges, with care taken to eschew stereotypes related to appearance and/or accents, cultures, and ethnicity. The DVM student cohort is fortunate to have a great diversity of ethnicities, nationalities, and cultural, gender, and social groups that facilitate this purpose and allow students to be exposed to the reality of the increasing diversity and demographics of multicultural countries[63] such as those that exist in Australia. Informal in-class observations show that cross-cultural working groups tend to foster rich discussions, respectful interactions, and opportunities for growth through exposure to a diversity of ideas and perspectives; this is consistent with findings from previous studies on cultural sensitivity and intercultural competence in students.[22,64,65] However, this does not exclude cultural differences between students that can result in tensions. The veterinary program at SSVS has shifted from a white, Anglo-male–dominated student cohort to one that is predominantly female and more diverse on economic, ethnic,

religious, and international lines, consistent with observations for universities in Australia[66,67] and in other countries.[68] These shifts in veterinary student composition across universities have encouraged institutions to put more effort into fostering inclusive campus environments.[69]

Promoting a positive attitude to diversity and intercultural confidence foregrounds the needs of the client and, by extension, the welfare of the animal in veterinary practice.[20] This is flagged by Stone et al.,[70] who investigated the impact of key initiatives in veterinary education in the United States and Canada. This study involved analyzing survey data from academic leaders from veterinary schools that are members of the Association of American Veterinary Medical Colleges.[70] While evidence shows increasing awareness of diversity in the veterinary schools surveyed, progress in promoting CC in the veterinary profession is still lacking. Notably, at SSVS, informal student feedback following the cross-cultural communication session in VETS6201 was overwhelmingly positive. The session involving a deaf speaker and translator who presented using Auslan sign language was well received by students, to the extent that some students enrolled in further workshops offered by the Australian Deaf Society. In other studies, the introduction of language skills in a veterinary program helped to foster CC, respect for cultural differences, and a better understanding of clients' situations and more positive attitudes toward diversity and intercultural confidence.[22,71] As such, including a session on different languages to generate resources about animal health to better inform clients from diverse linguistic backgrounds[21] would be a valuable addition to the CC curriculum.

We consider that any efforts toward developing and implementing a CC curriculum should be accompanied by promoting positive change in campus climate. By engaging SSVS teaching staff and those in leadership in a CC agenda that included professional development, we have been able to sustain the curriculum changes and develop a positive climate on campus where students are prepared for living and working in a diverse world.[69] This contributed to a shift in SSVS culture and made significant steps toward building a workplace that values CC as everyone's business. The starting point of this change was characterized by levels of indifference, denial, defence, minimization, ethnocentrism,[72] and ignorance about CC, shifting to a new viewpoint that recognizes other worldviews as legitimate[73,74] and that diversity and inclusion are assets for veterinary education and the profession.

This article reports on a teaching-focused initiative; as such, ethics approval was not required. Formal student evaluation and verbal feedback of their CC learning experience are therefore not included. Student surveys following the first session of the Veterinary Professional 1 field trip have previously been published as part of a One Health educational research project.[41] The CC component of the field trip was rated highly by most students, who agreed that it provided a very good or good learning experience; for example, one student commented: "I really liked the cultural session as it opened my eyes to more of what a vet is expected to fulfill in a society."[41](p.63)

The initiatives reported here have had a significant impact in achieving sustained growth in CC capacity among SSVS and faculty staff and students, evidenced in a variety of ways. As reported by J. Gongora,[75] since the work reported in this article commenced, over 3,400 faculty stakeholders have engaged in Indigenous seminars, CC training, and professional development activities. Indigenous students are increasingly involved in leadership roles, and they are celebrated in different ways; for example, they share their stories via videos embedded in

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the university website. It is now common practice for SSVS to include the acknowledgment of country in communications and lectures, and smoking ceremonies are included in major events, including the DVM orientation day. Unpublished data gathered by the lead author (JG) indicates that since 2014, the number of Indigenous students applying to SSVS and animal science courses has doubled, and the retention rate surpassed 90%, with Indigenous students now proportionally represented within the SSVS student body. Increases in Indigenous student enrollment and retention rates may not be a direct result of curriculum change, but these outcomes are likely a consequence of the strategies to mobilize the curriculum described.

Limitations
Ongoing development of the CC curriculum continues, as a need remains to explicitly embed CC in the clinical and non-clinical rotations in years 3 and 4 of the DVM at SSVS. At present, it is assumed that what is taught in the eight units of study in the pre-veterinary and DVM programs equip veterinary students with the skills to reflect on the CC challenges they will face during these rotations in their final years of study, but it is up to the students to seek advice from teaching staff about CC, and students from different cultural backgrounds have variable levels of comfort in doing so. Although competing demands in relation to curriculum content and skills are inevitable within professional programs such as the DVM, a next step would be to provide a more systematic and formal approach and provide opportunities for student reflection during the preparation, implementation, and evaluation stages of their clinical work with culturally and linguistic diverse clients and placements in cross-cultural settings as demonstrated by the inter-professional intervention program at the University of Wisconsin.[76] Although self-reflection on unconscious bias and professional practice is central to our work at SSVS, it could be improved by being embedding at a more practical level during a consultation process where students have the opportunity to further learn and apply cultural humility, which could lead to a positive professional practice and learning experience.[76] Another approach, by Ion Ionescu of Brad University (Romania), is use of a massive online open course (Zoe's project) and case studies to enhance CC in veterinary students[77] so that students can become culturally competent health care providers and practitioners.

Moving Forward
We have developed a compendium of locally and internationally available resources and various case studies on CC and situations that veterinarians are facing in cross-cultural settings, community-based programs, and the workplace. Some of this has been available to year-4 DVM students as an e-learning option for VETS6408—Public, Industry or Community Placement—during COVID-19 to reflect on community and stakeholder consultations, food in cross-cultural settings, and culture shock. It is anticipated that this will support the development of CC, which will better equip students to cope with the varying attitudes to animals and the moral stress that arises from differing values placed on pet animal lives.

CONCLUSIONS
In 2012, as we prepared for significant curriculum change that integrates CC into the veterinary curriculum at SSVS, we could not identify any archetypes in Australian or international veterinary schools. Since that time, we have planned, designed, and implemented a curriculum in which CC and cultural capacity

is deeply embedded. The impacts of this work have been significant for students, our graduates, and SSVS and faculty staff. We have integrated CC vertically into the veterinary curriculum and developed a rich suite of varied and contextual learning activities with increasing sophistication to align with students' interests and to progress them along the CC continuum. The design of this curriculum distinctly and respectfully acknowledges the perspectives of Aboriginal and Torres Strait Islander Peoples. This work has contributed to a trend of positive change in behaviors and attitudes in veterinary students to give them foundational skills in CC to effectively and respectfully interact across cultural, within multicultural, and in diverse social, gender, and community environments. This has resulted in a curriculum where we introduce CC concepts, encourage students to identify the challenges, develop strategies, and then implement them through repetition, reinforcement, and reflection. It is a model framework for curriculum development in veterinary schools seeking to recognize that CC is everyone's business.

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AUTHOR INFORMATION

Jaime Gongora, BEd (Biology and Chemistry), MBiol, PhD (Animal Genetics), is Associate Professor in Wildlife Genetics and Genomics and Associate Dean Indigenous Strategy and Services, Sydney School of Veterinary Science, Faculty of Science, University of Sydney, Regimental Dr., Camperdown NSW 2050, Australia. Email: jaime.gongora@sydney.edu.au.

Ingrid van Gelderen, BVSc, MVSc, GradDipEd, GradCertEdStudies (Higher Education), is Associate Lecturer, Sydney School of Veterinary Science, Faculty of Science, University of Sydney, Regimental Dr., Camperdown NSW 2050, Australia. Email: ingrid.vangelderen@sydney.edu.au.

Meg Vost, BA, MIPH, is Educational Designer, Faculty of Science, University of Sydney, Regimental Dr., Camperdown NSW 2050, Australia. Email: meg.vost@sydney.edu.au.

Sanaa Zaki, BVSc, PhD, GradCertEdStud (Higher Education), MANZCVS (anaesthesia), is Associate Professor, Sydney School of Veterinary Science, Faculty of Science, University of Sydney, Regimental Dr., Camperdown NSW 2050, Australia. Email: sanaa.zaki@sydney.edu.au.

Stewart Sutherland, BEd (Vocational Education and Psychology), MHS, PhD, Dip (Welfare), Grad Cert (Health Science), Cert (Working with Problematic Drug Users), Cert (Counselling), was Guest Lecturer in Indigenous Cultures, Sydney School of Veterinary Science, Faculty of Science, University of Sydney, Regimental Dr., Camperdown NSW 2050, Australia, and is Lecturer, College of Health and Medicine, Australian National University, Canberra ACT 0200, Australia. Email: stewart.sutherland@anu.edu.au.

Matthew Pye, BA(Hns), BSc (Hns), PhD (Botany), GradCertEdStud (Higher Education), is Lecturer FHEA, School of Life and Environmental Sciences, Faculty of Science, University of Sydney, Camperdown NSW 2006, Australia. Email: matthew.pye@sydney.edu.au.

Anne Quain, BA (Hons), BScVet (Hons), BVSc (Hons), MVetStud, GradCertEdStud (Higher Education), MANZCVS (Animal Welfare), Dip ECAWBM (AWSEL), is Lecturer, Sydney School of Veterinary Science, Faculty of Science, University of Sydney, Regimental Dr., Camperdown NSW 2050, Australia. Email: anne.quain@sydney.edu.au.

Rosanne Taylor, BVSc, DipVetClinStud, PhD, GradCertEdStud (Higher Education), is Professor Emerita, Sydney School of Veterinary Science, Faculty of Science, University of Sydney, Regimental Dr., Camperdown NSW 2050, Australia. Email: rosanne.taylor@sydney.edu.au.
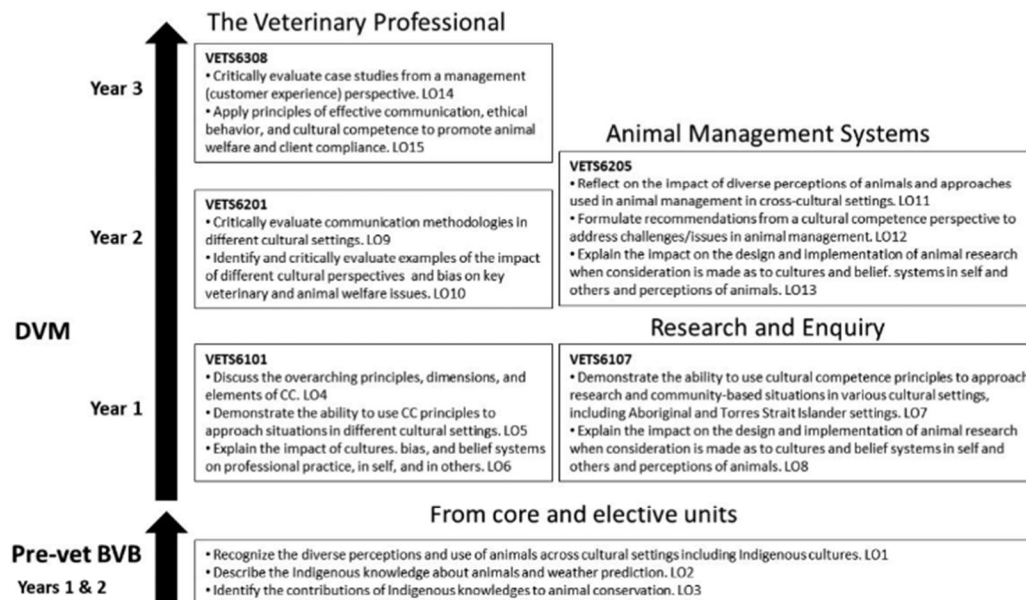
Supplementary Figure 1: Learning outcomes for the CC curriculum embedded in the veterinary programs at the SSVS, University of Sydney

CC = cultural competence; SSVS = Sydney School of Veterinary Science; DVM = Doctor of Veterinary Medicine; BVB = Bachelor of Veterinary Biology; LO = learning outcome

Note: Numbers have been assigned for mapping purposes against recommendations by education and veterinary associations in Supplementary Table 1.

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Supplementary Table 1: Mapping of learning outcomes embedded into the veterinary programs at SSVS against the competencies, principles, and recommendations by education and veterinary associations

	LOs as described in Supplementary Figure 1														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Recommendations related to cultural competence made by education and veterinary associations															
Framework for mapping Indigenous content and CC skills training, Universities Australia[3]															
General understanding of culture.				X	X										
Cultures and histories Indigenous Australians.	X	X	X	X	X	X	X	X	X	X	X	X	X		
Students' own cultural values/attitudes.				X	X	X									
Critical investigation of professional practices.							X	X	X	X	X	X	X	X	X
General CC skills and strategies.							X	X	X	X					
CC skills and strategies specific to profession.				X	X	X	X	X	X	X	X	X	X	X	X
Competency Roadmap for Veterinary Medical Education in the Twenty-First Century, North American Veterinary Medical Education Consortium[6]															
Collaboration					X	X						X	X	X	X
They work as effective team members in interdisciplinary, multi-professional, and multicultural environments.															
Veterinarians sustain effective professional relationships and skillful, sensitive, and appropriate communications with clients, colleagues, other health care professionals, and the public. They communicate effectively, using various methods in a variety of settings with the purpose of achieving the best outcomes/results.										X	X				
Veterinarians demonstrate an understanding of the manner in which cultures and belief systems impact delivery of veterinary medical care while recognizing and appropriately addressing biases in themselves, in others, and in the process of veterinary medical care delivery. This includes demonstrating an understanding of:					X	X	X	X	X	X	X	X	X	X	X
(a) Societal diversity in its various dimensions.															
(b) Working in diverse teams.															
(c) The varying societal roles of animals among diverse population groups.															
(d) How to provide the most appropriate veterinary medical advice to a diverse clientele.															
Explain how the strengths and benefits of diversity within veterinary medical communities and the communities that veterinarians serve influence veterinary medical decisions.															
Competency-Based Veterinary Education, Association of American Veterinary Medical Colleges[5]															
Demonstrates inclusivity and cultural competence.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
(a) Demonstrates respect for diversity.															
Adapts communication style to colleagues and clients.						X	X	X	X	X	X	X	X	X	X
(a) Demonstrates client-centered communication.															
(b) Elicits client goals, expectations, perspectives, and constraints, considering the human–animal bond.															
(c) Engages clients in difficult conversations such as financial decisions and end-of-life care (e.g., palliative care and euthanasia).															
Interprofessional Global Health Competencies for the Twenty-First Century, Consortium of Universities for Global Health*[78]															
Sociocultural and Political Awareness.	X	X	X	X	X	X									
Sociocultural and political awareness is the conceptual basis with which to work effectively within diverse cultural settings and across local, regional, national, and international political landscapes.															
Social and Environmental Determinants of Health.															
Focuses on an understanding that social, economic, and environmental factors are important determinants of health, and that health is more than the absence of disease.							X	X	X	X	X	X			
(a) Describe how cultural context influences perceptions of health and disease.															

SSVS = Sydney School of Veterinary Science; LO = learning outcome;
Note: References are listed in the main body of the article.
*Although this consortium does not include veterinary competencies, it was presented here for interdisciplinary comparison.

Supplementary Table 2: Pedagogical approaches and outcomes used to embed cultural competence into various units of study in the BVB and DVM programs at SSVS

		Units of study implemented in					
Approach	Engaging students in:	BVB	VETS6101	VETS6201	VETS6308	VETS6205	VETS6107
Problem-based learning	Investigating and responding to cultural competence questions and challenges in veterinary practice.[79,80]		X	X	X	X	
Productive exercise in failure	Generating solutions to problems and case studies before concepts of cultural competence have been explained.[81]			X		X	X
Collaborative learning	Working together as a team, collaborating, using resources, discussing, investigating, solving tasks, and/or generating solutions in cross-cultural competence settings.[82,83]	X	X	X	X	X	X
Reflective learning	Self-awareness and critically analyzing situations/case scenarios by identifying the significant aspects and analyzing tensions, appropriate and unsuccessful approaches, challenges, and opportunities for improvement in cross-cultural environments. [84,85]	X	X	X	X	X	X

BVB = Bachelor of Veterinary Biology; DVM = Doctor of Veterinary Medicine; SSVS = Sydney School of Veterinary Science
Note: References are listed in the main body of the article.

Supplementary Table 3: Questions used to guide the discussion and reflection session about the importance of learning about cultural competence in the veterinary profession.

Why is cultural competence important to:	Topics of reflection after students' responses
Working with culturally and linguistically diverse clients, social groups, and people in the area where veterinarians live and/or work?	• It promotes respect for others, including both clients and workmates. • It facilitates effective practitioner–client communication, including during consultations. • It assists in developing culturally safe and more inclusive environments.
Animal care and the health of animals?	• It provides a better understanding of cultural attitudes and practices that may affect animal care. • It helps patients (animals) reach optimum health and welfare.
Undertaking animal health, animal welfare, One Health, animal conservation, and animal management research projects and programs in urban, rural, and remote areas?	• It is useful when engaging and interacting with communities and stakeholders. • It assists the process of collaboration with people, including those in programs for socioeconomic development.
The animal hospital/clinics?	• It allows practitioners and animal clinics/hospitals to better meet the needs of clients who are of diverse ethnic, religious, linguistic, and cultural backgrounds. • It can increase revenue for private practitioners through an increased client base.
The practitioner and professional practice?	• It contributes to the personal development and/or employability of practitioners. • It touches on every aspect of the veterinary education and practice.

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Supplementary Table 4: Questions used to reflect on the likely benefits of effective and culturally competent communication in cross-cultural environments

Question*	Potential responses
What are the likely benefits to the health of the animal involved?	• Clear communication with clients and communities around the health and care of the animals. • Reduction of the likelihood of errors in client and community understanding of the health, diagnosis, welfare, and/or use of the animals.
What are the likely benefits for the service provided to clients?	• Increased frequency of access of services by clients if they are in an environment where they are listened to and communicated with in a culturally appropriate manner.
How could this assist in improved relationships between the practitioner and client?	• Reduction in the power imbalance between practitioner and client by increasing the client's level of ownership, self-empowerment, and confidence in relation to the health status of their animal and/or as part of a research project or community program.
How could this assist in the professional and personal development of the practitioner?	• A likely improvement in the satisfaction of the practitioner with their work. • Enhancing of the cultural competence of the practitioner and the practice. • Increased awareness of biases when practitioners communicate with clients from diverse linguist and cultural backgrounds.
How could this assist in managing difficult and sensitive conversations?	• Using sensitive and culturally appropriate approaches to difficult discussions on health diagnoses, euthanasia, and financial aspects, or in situations where emotion, grief, and anger are involved.

Note: Reference is listed in the main body of the article.
* Some questions were based on and modified from sources including VetVisuals[86] and Bonvicini and Keller.[46]

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