

Review

Fostering the Development of Professionalism in Veterinary Students: Challenges and Implications for Veterinary Professionalism Curricula

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Abstract: The importance of professional skills teaching and assessment within veterinary education has recently been highlighted in the veterinary education literature. This academic discourse follows the acknowledgement by both veterinary employers and graduates themselves that new graduates often lack the professional skills and attitudes needed for success in clinical veterinary practice. Traditionally, veterinary curricula have focused solely on teaching content knowledge and clinical skills; however, veterinary education curricula clearly must also contain dedicated instruction in veterinary professionalism. This must include instruction in communication skills, emotional intelligence, cultural awareness, teamwork abilities, dispute resolution strategies and the awareness that multiple approaches may be required to resolve challenges. It has become unrealistic to expect students to rely on observation and role modelling to foster the development of professionalism. There is a need to incorporate explicit learning activities that reinforce the knowledge, attitudes, values, and behaviours that characterise veterinary professionalism. While role modelling remains a key aspect of the veterinary professionalism learning that takes place through the informal/hidden curriculum, many students have often had more experiences with negative role models than with positive ones. This can lead to the development of a tolerance or normalisation of negative behaviours and a decline in students' perceptions of professionalism. This article aims to continue recent conversations on professional skills teaching within veterinary education, define what is meant by veterinary professionalism and consider the plethora of terminology used when trying to establish a definition, highlight those attributes of veterinary professionalism deemed important by veterinary stakeholders for career success and employability, and explore the challenges of incorporating the teaching and assessment of professional traits into veterinary education.

Keywords: veterinary; professionalism; professional; skills; attributes; competency; competencies; competence; formal curriculum; informal/hidden curriculum; teaching; assessment



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1. Introduction

A recent article by Byrnes [1] has highlighted the importance of professional skills teaching within veterinary education, and has encouraged the current authors to continue the discussion. Traditionally, veterinary curricula have focused solely on teaching content knowledge and clinical skills. This focus has broadened over recent years to acknowledge the challenges within the veterinary profession and the constantly changing professional work environment [2]. In order to provide graduates with the complete and holistic skillset needed for future employment, curricula must also contain dedicated instruction in non-technical professional skills [1–5]. Indeed, graduates' attainment of skills in professionalism

appears to be as important a determinant of their employability [6,7] as their attainment of clinical and technical skills [8]. Moreover, providing graduates with the interpersonal and self-support skills necessary to succeed in clinical practice is associated with reduced risk of veterinarians developing burnout, compassion fatigue and mental health concerns [9–11].

Surveys of veterinary employers and graduates themselves have provided a consensus view that new graduates lack the non-technical skills and professional attitudes needed for success in the clinical and professional work environment [12–19]. The management and communication requirements of veterinary practice have been highlighted amongst such concerns; notably, communication skills, emotional intelligence, cultural awareness, teamwork abilities, dispute resolution strategies, and the awareness that multiple approaches may be required to resolve challenges [20–22]

This situation has arisen primarily because veterinary educators tacitly assumed that students would passively acquire veterinary professionalism attributes during the course of their content-heavy clinical curriculum [23]. Until recently, veterinary schools assumed little responsibility for veterinary professionalism instruction, assuming that the students' social interactions with clinical staff, classmates, veterinary practitioners and family members would suffice [9]. More recently, as the importance of including professionalism in veterinary education has been recognised, literature on not only the definition of professionalism (i.e., as it pertains to graduating veterinarians), but also the content and the pedagogical methods needed to deliver such a program has increased in both quantity and quality [1–3,14,24–26]. However, there is a lack of a clear conceptual framework behind 'veterinary professionalism', partly due to a plethora of semi-overlapping definitions of professionalism (particularly as it pertains to outcomes of primary veterinary qualification programs) and, perhaps consequentially, a lack of consensus relating to what, when and how the topic should be taught. These problems are not helped by the plethora of terms, e.g., 'veterinary professionalism', 'veterinary professional skills', 'veterinary professional competencies' and 'veterinary professional attributes' used to encompass this skillset [25–30]. However, there is a progressively developing consensus in the literature on those attributes of veterinary professionalism that are important for career success and for employability, and on how these can be incorporated into veterinary training [12,14,27,28,31].

2. Defining Professionalism

Professionalism, as considered by Bryden et al. [32] and O'Sullivan et al. [26], may be an intangible concept that does not lend itself easily to definition. If, however, professionalism is to form a useful part of a veterinary program, a definition that is sufficiently concrete to inform the content and/or outcomes of the program is needed. On that basis, a definition can be created via the set of appropriate behaviours or attributes on which the role and scope of the profession is based [33]; or, on the other side of the same coin, on the basis of examples of poor professionalism [33,34]. Once clear definitions of veterinary professionalism have been developed, educators can make an evidence-based appraisal of the suitability of veterinary curricula. In addition, they can identify professionalism concerns and support students in correcting these concerns before the students graduate as veterinarians. Ideally, therefore, in order to help determine curriculum content, a universally acceptable definition of professionalism is needed. This definition would have to be simple and straightforward to ensure that the teaching of professionalism is pragmatic, achievable, and easy to assess [33].

Attempts to create such a definition of veterinary professionalism started in the late 1990s. Some were based upon addressing how the profession could survive the prevailing economic challenges and increase its revenue base [35,36]. However, such early definitions neither considered the values and beliefs that veterinarians should possess, nor acknowledged the social contract that is incumbent upon a profession. Latterly, behaviours and skills such as integrity, innovation, emotional intelligence, leadership, and motivation have come to be regarded as the critical determinants of professionalism [33].

3. The Overlapping Landscape of Professionalism, Professional Skills, Professional Competence, and Professional Attributes

One of the reasons that defining professionalism has become difficult is the confusion created by the different terms that are used. 'Professional skills' include competencies in communication, business, well-being and governance; whilst 'professionalism' includes displaying the appropriate behaviours and attitudes inherent within the profession [25]. The term professionalism includes emotional responses such as feelings, attitudes, values, and motivations, together with qualities of character and conscience [37]. Professionalism could, therefore, be characterised as the internalisation of ethical, moral, altruistic, and empathetic attitudes, behaviours and values required of veterinarians while ensuring competent and compassionate patient-centred care [38].

Professionalism has been presented by some authors as a theoretical construct described in abstract and idealistic terms. These terms mirror character traits (e.g., altruism, honesty, integrity) rather than directly observable behaviours [26]. These terms are difficult to translate into measurable learning outcomes, as they are insufficiently specific [26], and because internal attitudes and values can only be interpolated, rather than measured, from complex behaviours [27]. Hence, van Mook et al. [39] moved to frame professionalism around more tangible and observable behaviours that can be identified and evaluated, such as communication skills, problem-solving and teamwork.

Furthermore, it has been suggested that the terms 'professional skills' or 'non-technical skills' are misleading and terms such as 'professional competence', 'professional competencies', 'professional attributes' or 'professional capabilities' should instead be adopted [28,40,41]. The terms 'competence' and 'competency' are often used interchangeably to describe the ability to do something successfully or effectively [29,42]. Some authors distinguish between the terms and describe competency as a skill needed to complete a job and competence as the ability to do something well [43,44]. Norman [29] defines professional competency as a multi-dimensional concept that includes the cognitive, social, and functional skills required for occupational success. According to Attewell [45] (p. 433), the term competence evokes an image of "expertise, mastery, and excellence." Indeed, 'professional competence' has been perceived as a term embracing both professionalism and professional skills, and has been described as the judicious and habitual use of communication skills, clinical reasoning, values, emotions, and reflection for the benefit of the community being served [30].

The terminology of competencies and attributes has also been contested. Willcoxson et al. [46] (p. 66) refers to "the muddied waters of competencies and attributes," as both terms could be used as synonyms for professional skills, generic skills, core skills, employability skills, graduate capabilities or even graduate outcomes. To further complicate matters, competencies have traditionally been associated with the requirements of professional bodies or vocational training. In contrast, attributes or capabilities have been associated with the outcomes expected in tertiary education [46]. Despite these contradictions, if the teaching of veterinary professionalism at tertiary institutions is to be improved, a universal term should be adopted that embraces all these perspectives.

4. Identifying Important Attributes of Veterinary Professionalism

Veterinary researchers have tried to identify specific traits which define professionalism. Broadly, these include traits of which the primary focus is the business of veterinary practice (e.g., sound financial, business and management skills); those which relate to personal and interpersonal behaviour (e.g., communication skills, confidence, honesty, integrity, altruism, empathy, autonomy, decision-making, teamwork and acknowledgement of limitations); and those which relate to self-management (e.g., a commitment to lifelong learning, achieving work-life balance, career planning, coping with career challenges) [22,33,47–50].

Both new graduates and veterinarians with established careers have ranked personal and interpersonal skills as more important for career success than a sound knowledge of veterinary sciences or even accurate diagnostic skills [15,51]. Mossop [33] similarly identified

the centrality of the attributes of caring and empathy, honesty and trust, altruism, personal efficiency, communication skills, problem-solving, decision-making, self-confidence, self-regulation, knowing one's limits and maintaining technical competency. Moreover, this author argued that the use of these attributes to balance the interests of the client, the patient, the practice, and the wider veterinary profession represented the core of professionalism [3]. Gordon [52] used a mixed methods approach to analyse the opinions of veterinary students, clinical veterinary practitioners and veterinary clients in New Zealand on important professionalism attributes for career success. Similarities were noted between themes across different stakeholders and were merged into four overarching themes: 'effective communication', 'accountability, integrity, trustworthiness and honesty', 'personal wellbeing', and 'quality of service'.

A meta-analysis by Cake et al. [28] marked the first systematic review of evidence to support the inclusion of veterinary professionalism instruction in veterinary primary qualifications. This analysis concluded that the importance of professional behaviour and communication skills was explicit throughout the literature. Attributes such as emotional intelligence, self-awareness and self-confidence were more sparsely represented, and traits such as cultural competency, information technology, health and welfare advocacy, and leadership were perceived to hold little importance for veterinary graduates. Interestingly, communication skills were perceived to be important by veterinarians and employers but less so by clients. Pun [53] likewise concluded the importance of including communication training within primary veterinary education from an in-depth review of 48 studies on the role of veterinary communication. Fortunately, a recent analysis of the professional skills topics presented to students at veterinary schools in the United States of America in 2019 revealed that communication training was the most common topic covered [2].

Business skills occupy an equivocal place in the literature. For example, Cake et al. [31] found that the inclusion of business skills within veterinary professionalism training was associated with improved employability, higher income, and greater employer satisfaction, although veterinary students, new graduates, experienced practitioners, and clients considered business skills less important than other competencies. Heath and Mills [19] reported that veterinary employers regarded financial and practice management knowledge as essential attributes for new veterinary graduates, whilst Bachynsky et al. [54] found that new veterinary graduates described dealing with the financial aspects of practice as a significant problem during their transition to work.

Important as all of these traits are, Nielson [55] warned that updating the veterinary curriculum based only on lists of attributes would not equip new veterinary graduates with the necessary skills for career success. The construct of professionalism has become too nuanced and complex to be reduced to a simple checklist of appropriate attitudes, behaviours, and appearances [33,56]. Checklists may serve as a useful tool to catalogue the appropriate behaviours and attitudes required of a veterinarian, but broader discussion is needed around the role of health care professionals in today's complex society [33].

5. Framing the Teaching of Veterinary Professionalism within an Employability Context

An alternative perspective on professionalism is the employability of graduates and the career success of professionals. Employability has become a priority area for universities and employers and is a major driver in higher education [57]. The focus on employability has created the potential to address multiple contemporary challenges for veterinary education and the profession by emphasising those capabilities most important to future career success and satisfaction. This focus has become especially relevant in light of the gap that appears to exist between employers' expectations and the perceived capabilities of graduates [14,58–61].

Cake et al. [57] has suggested that employability presented a more realistic and representative framework to evaluate the role of professionalism in veterinary employment than that provided by traditional criteria, largely because defining professionalism in terms of employability includes the veterinarian (i.e. self) as an important stakeholder. Traditionally,

professionalism is orientated towards a social contract with key criteria addressing the capacity to recognise personal and professional limitations. In contrast, when considered in terms of employability, there is a stronger focus on personal and professional strengths, and the needs and desires of veterinarians themselves [27,62]. Professionalism, in terms of employability skills, should therefore comprise both interpersonal skills such as communication, critical thinking, problem-solving and teamwork, and personal attributes such as self-awareness, self-confidence, wellbeing and resilience [63]. The nexus between professionalism and employability acknowledges the expectation that veterinarians will be able to navigate the requirements of multiple stakeholders including employers, clients, work colleagues, industry, and veterinary statutory bodies, as well as themselves. According to Cake et al. [57], the use of the term employability as a paradigmatic framework has the capacity to satisfy all veterinary stakeholders' needs in a sustainable way.

6. Challenges Associated with the Teaching and Learning of Professionalism in Veterinary Programs

Three curricula can be identified in a primary veterinary qualification [3]. The 'formal curriculum' includes the syllabus, the teaching, and the assessing of the actual course of study. It also considers the educational settings such as lecture halls, tutorial rooms and laboratories [64]. The 'informal curriculum' occurs in interactions between teachers and students and is opportunistic, idiosyncratic, and often unplanned. The 'hidden curriculum' represents the subliminal and unspoken academic, social, and cultural messages of both the formal curriculum and informal curriculum that can significantly influence the culture of an institution. The hidden curriculum consists of multiple components in medical and veterinary education. These include the power hierarchy inherent in veterinary medicine, role models in the clinical teaching environment, the institute's rules, regulations, rituals, routines and resource allocations, and the language and jargon used in the clinic wards and corridors [65].

6.1. The Formal Curriculum

In recent years, veterinary clients have become more quality-service oriented, more resourceful, and more culturally diverse than previously [51]. The success of the veterinary profession is dependent on adapting to society's changing demands; thus, veterinary education needs to act as a key leverage point to accommodate this change [51]. Since professional attributes and attitudes are now deemed essential for all veterinary students regardless of their career interests [15], these attributes need to be taught with the same rigour as other basic medical and surgical skills within the core curriculum. Veterinary education should therefore facilitate the process of socialisation where students acquire the values, attitudes, and beliefs essential to acting as a professional, in addition to the usual knowledge and technical skills [1,66]. Veterinary professionalism education is, however, far from straightforward. Professional competencies do not remain stagnant, but instead develop over time [1]. Since professional traits often develop and become refined through life experiences, Byrnes [1] insists that they are less responsive to instruction compared to the more traditional clinical skills.

Various innovative approaches to assist in the teaching of professionalism have been suggested. Self-reflection exercises in small discussion groups create an environment that is conducive for clinical staff to share their experiences with the students and reflect on their own emotional responses to clinical encounters [67]. Furthermore, critical incident narratives in small group settings foster self-reflection and act as a powerful means of addressing learners' deeply held values and attitudes. These narratives serve to make the students aware of relationship-centred care. Such an approach to care allows the clinicians to attend to their own needs as much as they care for their patients/clients. Coulehan [67] also considered that this approach diminishes the archaic insistence on altruistic self-sacrifice when treating patients/clients and thus reduces the risks of emotional disengagement and burnout.

Professional knowledge should, however, never be inserted into a curriculum as an afterthought [49], nor be presented in an isolated module, but should instead be longitudinally integrated throughout the curriculum [25]. The teaching of professionalism should therefore be integrated into the fabric of the curriculum, covering ethical values-based approaches such as honesty, altruism, empathy, respect, accountability, and confidence [25] in the context of each component of discipline-specific instruction.

It is, however, important to consider that the socialisation of veterinary students into the profession could be influenced by professional hierarchies that embed inequities, and which do not reflect the diversity of the current student body [56]. By conforming to traditional models of professionalism, students may be forced to suppress manifestations of their cultural, political, economic or gender orientations, especially as the veterinary profession has often represented the viewpoint of white, male and class-privileged authorities [68].

6.2. The Informal and Hidden Curricula

Traditionally, the acquisition of professional behaviours and values by medical and veterinary students has occurred mainly through an informal socialisation process [50]. The importance of the hidden curriculum in modelling values such as efficiency, integrity, excellent patient care, and teamwork has been well-documented in medical degree programs (e.g., Bandini et al. [69]). Relationships and role models have played important parts in the transmission of behaviours and values expected of professionals [70]. Indeed, clinical instructors have been regarded as powerful role models in the socialisation of students through the demonstration of professional attitudes, behaviours, and values [71]. It is, however, important to note that all faculty staff serve as role models, as students spend their pre-clinical years interacting with and learning from faculty other than clinicians.

Further, the informal and hidden curricula can provide opportunities for students to explore their emotional experiences through self-reflection facilitated by small group discussions and mentorship, and to think critically about the mixed messages often received between the classroom and the clinical learning environment [72]. Indeed, medical students have indicated that understanding the learning that they are obtaining through the hidden curriculum is highly valuable as they transition into becoming physicians [73]. Similarly, Lempp and Seale [74] demonstrated that personal modelling upon positive role models formed an essential element of student development in medical education. The benefits of harnessing the positive effects of hierarchy in medicine, including promoting collegiality and communicating and working within teams, has also been highlighted [75].

The informal socialisation process is becoming complicated, however, by the increasingly diverse social, cultural, and economic backgrounds of students studying the medical and veterinary sciences [50]. Thus, Wear and Castellani [49] considered that professionalism flourishes when fostered through student engagement with clinical experiences built on knowledge, methods, and the development of skills outside medical science domains, and that this requires an intellectual widening of the veterinary curriculum that reinforces the humanistic values associated with the profession. It is in this context that Mossop and Cobb [25] believe that the teaching of reflective skills and the use of clinical experience are vital in teaching veterinary professionalism. They maintain that it has become inadequate to expect students to rely on observation and role modelling, and that there is a need to incorporate explicit learning activities that reinforce the knowledge, attitudes, values and behaviours characterising veterinary professionalism [25,50]. Students cannot be expected to absorb elements of veterinary professionalism infused in the curriculum, nor can they be expected to acquire aspects of professionalism by modelling themselves on ideal veterinarians [49].

In addition, the exposure of veterinary students to workplace learning and role models makes them vulnerable to the negative effects of the hidden curriculum. Humphrey et al. [76] and Mossop [3] noted that veterinary and medical students experienced an erosion of moral reasoning and empathy across the duration of their education, especially during the clinical training years. Karnieli-Miller et al. [75] analysed medical students' narra-

tives of their experiences with clinicians in clinical settings and discovered core themes of power, hierarchy, and emotional suppression. In addition, Shea et al. [77] reported that students witnessed derogatory statements made about patients, other students, and other practitioners, as well as poor confidentiality practices during their workplace attachments/internships. Unless the clinical culture within university teaching hospitals and external veterinary practices displays and integrates values similar to those encouraged in the students, it will undermine the professional development environment and diminish the impact of the formal curriculum [78]. In addition, if left unchecked, negative aspects of the hidden curriculum could force students to adapt as a survival strategy. Students could perceive that they would be rewarded for mimicking the unprofessional behaviour of their clinical instructors [26]. Mossop [3] and O'Sullivan et al. [26] have even suggested that veterinary and medical schools risk becoming the antithesis of professionalism by encouraging hierarchy, bullying, humiliation, and competitiveness.

Hence, it has become vital that the institutional environment recognise and mitigate the negative influence of the hidden curriculum that could, if left unchecked, undermine the entire professionalism program [66]. Some attempts have been made to minimise the destructive effects of the hidden curriculum through the creation of a positive client/patient-centred culture and the provision of relationship-centred care in teaching hospitals and external practices [76,79,80]. Another remedy has involved veterinary schools highlighting and rewarding positive professional behaviour when demonstrated by students [3].

Some authors (e.g., Michalec [81]) have, however, maintained that negative role models can still have a positive impact because, as active participants in the socialisation process, students should be able to make their own choice as to which role model they wish to emulate. Moreover, if veterinary students encounter no negative role models during their training, they may be unprepared for the realities of real life in the workplace, which may impede their future professional decision-making [3].

7. Challenges Associated with the Assessment of Professionalism

It is often hard to assess professionalism in primary degree programs because assessors are unable to agree on how to define it [26]. Consequently, the measures of success can be difficult to determine and the difficulties with identifying and characterising unprofessional behaviour can affect the success of an appropriate remediation plan. Determining the ideal method to assess professionalism remains an ongoing debate; indeed, van Mook et al. [82] (p. 153) described the perfect measure for assessing professionalism as lying “... most certainly in Utopia!”

The absence of formal assessment of professional attitudes and behaviours can, however, result in learners misunderstanding their importance. Inadequate assessment leads students to assume that educators place more importance on other knowledge or skill domains that are assessed more thoroughly [83]. Hence, various summative approaches to assessing veterinary professionalism, including rating scales, objective structured clinical examinations, simulated client-based assessments, peer assessments, direct observations with feedback by clinical staff, critical incident reports and reflective portfolios [26,82] have been recommended.

Formative assessment has been described by O'Sullivan et al. [26] as a useful method to help develop and guide students' professional conduct. It can be used to provide feedback to learners to help them improve, inasmuch as conducting frequent assessments allows remedial actions for struggling students to be undertaken in a timely way, giving learners the opportunity and the information to change inappropriate behaviour. Indeed, formative assessment of professionalism should be focused on the provision of high-quality feedback that helps prioritise learning and is performed against clearly defined learning outcomes [26].

Both formative and summative assessment, however, have traditionally focused on professional behaviour, as the attitudinal aspects of professionalism have been notoriously difficult to measure. These limitations impact the ability to measure professional attitudes

that affect physician performance and the quality of patient care [83]. This dilemma has been compounded by the observation of O'Sullivan et al. [26] that students' professional behaviour can be stage-managed without betraying their inner values, and that students' underlying personalities may reduce the likelihood of a positive response to a program that aims for long-term meaningful behavioural change [84]. It could be difficult, therefore, to provide professionalism instruction and to assess the outcome measures of professionalism in adult students who lack motivation to change or who do not possess insight into what constitutes unprofessional behaviour. Current assessment methods for professionalism in students have, therefore, been found to be inadequate and incidents of unprofessionalism have often only been discovered through complaints [85].

Huddle and Heudebert [86] and van Mook et al. [82] have emphasised the importance of breaking down professionalism teaching into small discrete steps, which allows the achievement of each step to be demonstrated and assessed objectively. Govaerts [87] maintained, however, that the specification of competencies into lists of discrete tasks could cause the relationships and nuances of professional attributes to be lost, and there is a significant risk of not capturing the inter-relationships between the cognitive skills, affective attributes, interpersonal skills, and psychomotor skills required to demonstrate competency [29]. It is vital, therefore, to identify measurable attributes or skills intrinsic to professional competence. Furthermore, there is a school of thought that believes that veterinary students need to acquire sufficient knowledge and conceptual understanding of the core elements of professionalism (lower order outcomes) before being expected to express appropriate values and exercise appropriate professional skills and behaviours within clinical contexts (higher order outcomes) [38]. In addition, these skills and behaviours need to be assessed, either within a controlled, structured environment such as in an objective structural clinical examination, or more naturalistically, within the context of clinical activities [83].

Norman [29] investigated the effectiveness of in-training evaluation in capturing students' professional performance during their final year clinical rotations. Various methods were described for assessing professional competency, one of which involved using Entrustable Professional Activities (EPAs). These describe units of professional activity that students can be entrusted to undertake unsupervised once they reach a prescribed level of competence [88]. Here, the assessment of performance focuses on whether the student is independent enough and can be trusted to perform an activity within a particular context. The qualities that students require that enable their assessors to trust them involve not only the domains of knowledge and clinical skills, but more importantly for the present discussion, aspects of conscientiousness, reliability, truthfulness, honesty, responsibility, acknowledgement of limitations and knowing when to ask for help, interpersonal communication skills, empathy, and admitting to and dealing with mistakes [88].

Expectations that students effectively develop communication skills, trustworthiness, compassion and social responsibility may, however, be unfair, given the current evaluative criteria of competency and success in contemporary medical and veterinary education [49]. Objectivity, replicability, and generalisability are currently regarded as important attributes in veterinary medicine, and a strong adherence to scientific knowledge and empirical methods permeates the areas of medical and veterinary medicine. Medical and veterinary practice may, however, also benefit from alternative domains of knowledge and modes of enquiry [49,89]. Philosophy, sociology, and spirituality may represent domains where communication, compassion and social responsibility are better learned and practised. Factors such as gender, social class, education, and cultural identity should be viewed as integral to, not separate from, establishing relevant medical knowledge [49].

8. Conclusions

Recent years have seen a significant change in the teaching of professionalism in primary veterinary qualifications. Formerly, senior students were only exposed to veterinary professionalism through role modelling by clinical teaching staff during clinical rotations and during external placements with private practitioners. Now, it is clear that the attributes and attitudes of professionalism are essential and need to be taught with the same rigour as other medical and surgical skills within the core veterinary curriculum. The former informal socialisation processes have become inadequate, and it is evident that veterinary schools are now assuming a greater level of responsibility for providing a program to develop the attributes of veterinary professionalism associated with veterinary career success [2,22]. Furthermore, professionalism instruction should be integrated throughout the curriculum, covering ethical, values-based approaches such as honesty, altruism, empathy, respect, accountability, and confidence [25].

The concept of employability has become a major driver in higher education [57], such that veterinary education needs to ensure that it has an adequate focus on those capabilities important to future career success and satisfaction. A gap appears to exist between employers' expectations and the perceived capabilities of graduates; thus, increased employer cooperation in regard to tertiary education, lifelong learning activities and research into best practices for tertiary institution–employer collaboration needs to be developed [58–61,90].

Veterinary education programs must consider the effects of the hidden curriculum on professionalism development. The exposure of veterinary students to workplace learning and clinical role models has made them vulnerable to the negative effects of the hidden curriculum; therefore, it is essential that veterinary schools create a culture of positive client–veterinarian relationships and care in teaching hospitals and external practices [76,79,80]. It is vital that the institutional environment supports the teaching of professionalism, as otherwise the negative aspects of the hidden curriculum can compromise the professionalism program [66]. Tertiary education also has a responsibility to assist students in becoming lifelong learners, constantly pursuing new knowledge [91]. Tertiary education should therefore encourage veterinary students to become self-motivated to continue learning after graduation.

Managing professionalism within a curriculum has been bedevilled by a lack of clarity around what is meant by the term. Various taxonomies of veterinary professionalism have been developed, with dependent descriptions of appropriate content. Increasingly the notion of 'professional attributes' or 'professional competencies' has, however, become predominant, and include the domains of communication skills, interprofessional collaboration, and personal and professional development [28]. Furthermore, it is increasingly proving essential in veterinary education to ensure that professionalism is not reduced to a list of attributes [92], as this is now recognised as insufficient to ensure that the attributes have become normalised into the behaviour of graduates. Thus, considering professionalism as a high order attainment that meets the expectations of personal behaviour, the social contract that society expects to have with professional people, and the expectations of employers [55] is probably the most appropriate manner in which it should be defined and understood. Nonetheless, professionalism remains a relatively mercurial concept, of which the teaching and assessment within primary degree programs remains an uncomfortable amalgam of the easily managed 'lists' of yesteryear and the notoriously difficult naturalisation and personalisation of the present expectations of society upon professional people.

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