Royal
Veterinary
College
University of London

1 **Developing a professional studies curriculum to support veterinary professional identity**
2 **formation.**
3
4 **Abstract**
5

6 Professional studies teaching in medical and veterinary education is undergoing a period of change.
7 Traditional approaches, aiming to teach students professional values and behaviours, are being
8 enhanced by curricula designed to support students' professional identity formation. This
9 development offers the potential for improving student engagement and graduates' mental
10 wellbeing. The veterinary professional identity associated with emotional resilience and success in
11 practice incorporates complexity in professional decision-making, and the importance of context on
12 behaviours and actions. The veterinarian must make decisions that balance the sometimes
13 conflicting needs of patient, clients, veterinarian and practice; their subsequent actions are
14 influenced by environmental challenges such as financial limitations, or stress and fatigue caused by
15 heavy workload. The aims of this paper are to describe how curricula can be designed to support
16 the development of such an identity in students. Relevant literature from medical education and the
17 veterinary profession will be reviewed to describe current best practice for supporting professional
18 identity formation, and then the application of these principles will be presented using the
19 curriculum at the Royal Veterinary College as a case study. Design of a "best practice" curriculum
20 includes sequential development of complex thinking, rather than notions of single best solution to a
21 problem, management of a hidden curriculum that tends to reinforce a professional identity
22 conceived solely on clinical diagnosis and treatment, exposure to veterinary professionals in
23 different environments who possess different sets of professional priorities, and contextualisation of
24 taught content through reflection on workplace learning opportunities.
25

26
27 Many veterinary curricula now include professional competencies, and skills that are classically
28 considered to be "non-clinical". The recent nature of this development means that this is new
29 material for many of those involved in curriculum design. Focusing professionalism teaching
30 exclusively on a set of technical skills (communication, business management, teamwork) runs the
31 risk of neglecting the potential benefits that a professionalism program can impart on graduates'
32 management of clinical complexity and their own mental wellbeing. In this article, we present a
33 rationale for constructing a curriculum around professional identity formation, rather than
34 exclusively focusing on professional skills and behaviours. After reviewing relevant veterinary and
35 medical education literature, we will describe how we have implemented the fundamental
36 curriculum design elements for the support of professional identity, including examples of teaching
37 and assessment strategies.
38
39
40 **Why do we need to support professional identity formation?**
41
42 Content relating to professionalism and professional skills has been developing in medical
43 and veterinary curricula over the past 20 years.[1-8] Most evident in the early development of
44 veterinary teaching were strategies aimed at improving professional skills:
45 communication,[1,2] business, leadership and practice management.[3-5] Early strategies to
46 embed professionalism in medical education arose in response to concerns surrounding
47 "deprofessionalisation", in particular perceptions of a loss of trust in doctors, increases in
48 managed healthcare (in the USA), and high profile scandals, such as the Harold Shipman
49 case in the UK. As a result, curriculum interventions were developed that focused on
50 attempts to teach students professional values (honesty, compassion, altruism, empathy
51 and trustworthiness)[6,7] and responsibilities (to social justice, patient confidentiality, and
52 management of conflicts of interest[7]). Teaching strategies were aimed at facilitating
53 students' internalization of professional values and adoption of professional behaviours, in
54 part by learning from role models.[8.9]
55
56 More recently, some of those individuals influential in these early developments have
57 advocated a change in focus.[10] Instead of teaching students values and responsibilities, the
58 more contemporary approach is constructed around supporting their professional identity
59 development. In particular, this recognises the importance of situation and context to the
60 decision, actions and behaviours demonstrated by the clinician.[10] It acknowledges that
61 students enter their medical education already equipped with many normative professional
62 values,[11,12] and that they can be supported in the demonstration of these in relevant
63 professional behaviours, but that this behaviour demonstration may be challenged by the
64 complex environment of the clinic.[11,13] Developing students' professional identity therefore
65 includes methods to enable individuals to act in accordance with their own values, and
66 understand the contextual challenges, such as stress, fatigue, high workload, and concern
67 about a patient, which may negatively impact on this. It also includes support for context-
68 related decision-making, rationalising the ideals of the individual against the needs of the
69 client and the challenges of the situation. Incorporating the importance of clinical context to
70 the successful expression of professional values allows the accusatory term
71 "unprofessional… the catch all criticism"[14] to be replaced by a notion of temporary lapses in
72 professional behaviour. Decisions are acknowledged as being context-dependent, and
73 therefore a universally appropriate "gold standard" is recognised as being overly simplistic.

74
75 This change in focus is welcomed from the perspective of student engagement in this area.
76 Early curriculum design was built on the assumption that professional values and behaviours
77 needed to be taught to students before they entered the profession.[8] The implications of
78 this are that students are somehow innately "unprofessional", and this is something that is
79 developed through education. Unsurprisingly, the medical education literature
80 demonstrated the resistance encountered to these approaches to teaching and assessing
81 professionalism.[15,16] Students resented their professional behaviours being judged by role
82 models who were themselves lacking professional values and behaviours.[15] Conflicting
83 messages in the hidden curriculum, predominantly surrounding the disconnect between
84 professionalism as taught in the classroom and as role-modelled in the clinic, led to a lack of
85 engagement in the value of professionalism education, and a distrust of the methods
86 used.[17] In contrast, a view of professionalism that incorporates a recognition of the
87 complexities of professional behaviours, constructed on the integration of personal and
88 professional values and patient needs, applied in a way that varies with context, is more
89 engaging for students and is perceived as being less judgmental.[14] Focusing professionalism
90 teaching on the complexity of decision-making and acting on those decisions, rather than on
91 teaching and assessment of professional values and behaviours, offers potential for
92 improving student engagement and their perceptions of the value of the content.
93
94 In addition to encouraging student engagement, a focus on professional identity
95 development represents "best practice" because of implications for graduate resilience and
96 mental wellbeing. A link between identity and mental wellbeing is increasingly recognised[18-
97 20] and in professions associated with significant levels of poor mental health, professional
98 identity development is an important part of a successful mental health strategy. A well-
99 developed professional identity is proposed to represent the difference between individuals
100 who successfully employ coping strategies to manage career stressors, and those who try to
101 use these but succumb to negative emotional consequences from career stress.[19] Career
102 coping methods, such as peer support, wellness programs and self-help methods (exercise
103 and a healthy lifestyle) will only be effective if the individual has a well-developed
104 professional identity. Acting in a way that is discordant with personal identity values is
105 known to result in a sense of failure and emotional distress.[18] Professional identity therefore
106 needs to incorporate personal identity values, and can be viewed as a process of negotiating
107 these into the professional role, constructing a set of professional priorities (which if
108 realised impart a sense of career satisfaction), and situating those values and priorities in
109 the context of the professional workplace. Veterinary professional identity is therefore
110 represented by the inter-relationship of personal beliefs, professional actions and clinic/
111 hospital context. If this is poorly developed, career success and satisfaction will be achieved
112 only if the individual's own personal values are consistently converted to desirable actions,
113 something that is challenged by the complicating influences of the clinic environment.
114 Emotional wellbeing is supported when a veterinarian builds their identity around actions in
115 context: an understanding that their decisions will be based on their personal values and
116 goals, integrated with those of the client and wider clinical stakeholders, and enacted in the
117 context of environmental challenges (financial limitations, cultural norms, an individual's
118 stress and fatigue).[21-25] Veterinary curricula therefore need to be designed to help students
119 construct a three-dimensional professional identity (personal values, professional actions

120 that integrate the values of all parties, expression of values and behaviours in the context of
121 the clinic environment).

123 Veterinary students are exposed to powerful hidden curriculum influences on their
124 developing identity.[26] Their education is typically dominated by specialist practitioners, an
125 identity associated with periods of work-life imbalance, the pursuit of a definitive diagnosis
126 and "gold-standard", evidence-informed, but disease-focused rather than health-focused,
127 therapy. Often the level of complexity evident in the veterinary identity is reduced: many
128 patients are referred with a lesion or area of pathology already defined, and the client and
129 referral veterinarian usually share common values relating to financial costs of treatment
130 and gold-standard clinical management. These scenarios are frequently regarded as good
131 teaching cases, because the aligned values, relative lack of financial limitations and
132 availability of a definitive diagnosis means a complete clinical picture can be relayed to the
133 student. Cases where the client opts not to pursue treatment or where a definitive diagnosis
134 is not achieved are often disregarded as not representing valuable teaching material. This
135 can reinforce students' narrow conceptions of a professional identity built on curing
136 disease.

138 In contrast, most veterinary graduates enter a first opinion practice environment, defined
139 by the need to act with confidence in the absence of a definitive diagnosis, manage the
140 complexity of conflicting client values and contextual limitations, and (at times) make
141 decisions not to treat.[23] An attempt by new graduates to emulate the specialist practitioner
142 identity in the context of a first opinion practice will result in frustration: the graduate will
143 experience dissonance and career dissatisfaction as the environment prevents the
144 expression of the values and actions modelled in the specialist practice, and clients and
145 colleagues will become frustrated as the graduate focuses their professional priorities on
146 definitive diagnosis and gold-standard therapy. To prevent this, steps to support identity
147 formation in the veterinary school additionally need to highlight the differences in
148 professional identity (values, priorities, actions and context) that will be evident within the
149 profession, particularly those in general, referral and academic practices. Exposure to
150 different role models in relevant contexts, rather than context-free teaching of professional
151 values and behaviours, therefore represents best practice for graduate wellbeing and
152 competence in different professional careers that require different versions of the
153 veterinary professional identity. This discussion of the hidden curriculum and differences in
154 professional identities demonstrates the final benefit of a curriculum built around
155 professional identity formation: formal inclusion of the competences of the general
156 practitioner identity, including acting in the uncertainty of a lack of definitive diagnosis, and
157 problem-solving complex scenarios where conflicting values and environmental challenges
158 are present.

160 The veterinary professional identity thus incorporates balancing the needs of numerous
161 stake-holders in problem-solving clinical and professional dilemmas.[21] During veterinary
162 student education, particularly in the earlier years, clinical problem-solving is typically
163 presented in a decontextualized manner, focusing on the disease of the patient and how it
164 may be best resolved. Weaknesses in graduates' competence in incorporating the needs of
165 the veterinary business in their reasoning and decision-making have been identified,[27] and
166 incorporating the needs of colleagues, the client and personal self (one's own priorities

167 associated with being a veterinarian) represent additional layers of complexity. If a student
168 develops a narrow conceptualisation of professional identity, for example one that is
169 disease-focused, built on achieving a definitive diagnosis, and based on the highly selected
170 caseload of many university-based, referral hospitals, any clinical decision that compromises
171 this in favour of the business or the client (for example taking treatment decisions in the
172 absence of a specific diagnosis), will represent an identity-behaviour mismatch, and may
173 result in a sense of failure. Furthermore, this will inevitably lead to a lack of confidence and
174 competence in managing complex professional dilemmas, in which the needs of the various
175 stakeholders are in conflict. Building a professional identity that acknowledges multiple
176 "right answers" rather than a single gold-standard, clinical approach, and recognizes that
177 the pathway selected will depend on individual circumstances and stakeholder priorities,
178 encourages competence in complex problem-solving and reaffirms the improved mental
179 wellbeing that can be achieved.
180
181
182 **How do we support professional identity? Principles for curriculum design.**
183
184 Professional identity formation is a complex process of identifying one's own personal
185 values, developing this into a set of goals and priorities for the professional self, and
186 negotiating the exteriorisation of one's goals, values and priorities into behaviours, social
187 interactions and decision in the professional environment.[28] The key elements of curriculum
188 design that best support this complex process are listed in Table 1. In this section, we review
189 relevant literature to explain each of these in turn. In subsequent sections we will present
190 examples from the curriculum at the Royal Veterinary College (RVC), University of London,
191 to demonstrate how we have achieved these key principles. Although this represents a
192 review of best practice, we will also include the challenges we have encountered in this
193 iterative process of curriculum development.
194
195 *The heterogeneous veterinary identity*
196
197 Recognising alternate versions of the professional identity is fundamental to being able to
198 develop from a naïve, narrow conceptualisation of veterinary identity built around curing
199 disease, to a broader one that looks holistically at patient health, engages with wider
200 stakeholder needs and incorporates the management of a challenging environment.[21] For
201 veterinary students, this necessitates a departure from the narrow set of ideals with which
202 they enter their education, typically focused on curing disease.[28] It also requires them to
203 value alternative identities to those they may have witnessed previously. Castellani and
204 Hafferty's model of professional identity illustrates the existence of seven different versions
205 of the medical professional identity, each defined by a different prioritisation of professional
206 attributes.[29] For example, in this model, an "Activist" professional will prioritise equality of
207 care, personal morality and altruism, an "Entrepreneurial" professional will prioritise
208 commercialism and a "Lifestyle" professional will place higher value on personal and family
209 life than they place on their work. Key to this model is the understanding that this
210 heterogeneity of professional values, and the varying way they are prioritised amongst the
211 profession's members, supports the overall strength of the profession.[29] This model is useful
212 for conceptualising the complexity of professional identity for veterinary students. It
213 demonstrates that there is not one single "ideal" set of values and behaviours that depicts

214   the valued veterinarian, and encourages the students to value "other": professional peers
215   with conflicting sets of priorities to their own.

217   In the previous section, we introduced the importance of students' exposure to different
218   role models in different contexts. A key process of identity formation is identity exploration
219   (identifying and considering identity choices).[30] To encourage students to engage in this
220   process, they need to be exposed to members of the profession whose identities are built
221   around different sets of professional priorities, and for these differences to be made
222   explicit. During this exposure (which occurs as part of the process of professional
223   socialisation: entering the workplace and engaging with members of the profession as a
224   student and future colleague), it is important that students are helped to recognise both
225   those aspects of identity that members have in common (such as a responsibility to uphold
226   animal welfare) and where they differ.

228   *Progressive increase in complexity*

230   Models of university learning emphasise the developmental nature of students' ability to
231   handle complexity in their conceptualisation of knowledge and problem-solving. Perry's
232   descriptions of student cognitive development[31] describe students entering university with
233   dualistic notions of knowledge, in which all questions have a correct answer (known by the
234   teacher), and alternative answers are incorrect. If a student at this stage has a professional
235   identity prioritising diagnosis and treatment, then treatment with an uncertain diagnosis,
236   provision of palliative rather than curative care, or euthanizing a patient rather than
237   pursuing a costly diagnostic work-up would all be conceived as "incorrect" (or less desirable)
238   patient care solutions, and would be dissonant to their identity ideals. Pursuing these
239   pathways would hence evoke a sense of failure. It is therefore necessary to progress
240   students to a multiplicity conception of knowledge: the existence of more than one
241   acceptable solution to a problem, and to relativism: solutions that are dependent on
242   context.[31] Achieving this level of development is essential for competence in professional
243   problem-solving, understanding that when balancing the conflicting needs of stakeholders,
244   the best course of action will vary depending on situation, and may, at times, be at odds
245   with the veterinarian's own professional goals.

247   Building on Perry's model, Cruess et al[32] use Kegan's stages of identity formation to
248   demonstrate the maturing intellectual and emotional complexity that is necessary for
249   students' identity formation.[33] At university entrance, students are expected to have
250   progressed beyond Kegan's stage 1, a child-like stage during which decision-making is
251   largely impulsive and without conscious reasoning. At stage 2, the typical university entrant
252   student identifies that decision-making is affected by the needs of others, but their own
253   needs will still predominate. At this stage, it therefore represents a significant challenge for
254   a veterinary student to empathise with stakeholders whose needs may conflict with their
255   own. Curriculum interventions that encourage more complex thinking, such as assessments
256   that reward the analysis of multiple perspectives rather than the provision of a single
257   correct answer, will facilitate progression to stages 3 (able to view multiple perspectives
258   simultaneously but seeks role models for approval of actions) and 4 (acceptance of the
259   different values of others, and defines the self independently of role models). At this mature
260   stage of identity formation, alternate views and conflicting values are encountered non-

261 defensively and managed without a threat to the individual's sense of self.[28,34] For
262 veterinary students at this stage, the individual has successfully managed the integration of
263 their personal self into a social professional context, and the management of conflicting
264 priorities and values becomes part of their veterinary identity.[21] To support this
265 development, teaching should be designed to provide opportunities for engagement with
266 complexity and management of conflicting values, including reinforcement of this in
267 teaching and learning that occurs in the workplace. However, it is important that learning
268 outcomes and assessment criteria recognise the staged nature of this development, and are
269 written at an appropriate level of complexity for learner stage.
270
271 *Reflection*
272
273 The model of professionalism teaching developed by Cruess and Cruess[8] is built around
274 cycles of delivered core knowledge, experiential learning and reflection. Reflection is
275 fundamental to the in-context application of professional identity concepts, and helps the
276 student to engage with the challenges of socially integrating and developing their personal
277 identity ideals. Following the delivery of information in core curriculum areas (see Table 2),
278 opportunities need to be provided for students to experience these in context, for example
279 during work placements or short clinic visits. A period of reflection then allows the student
280 to analyse their own success (or that of observed others) in managing their professional
281 identity, recognise challenges, and identify where further knowledge or skills are required.
282 While the benefits of reflecting on professionalism are widely accepted[35], it is less clear how
283 effective reflection is achieved. We have certainly identified, as reported by others,[17] the
284 importance of using authentic examples to trigger reflection on professional challenges,
285 students readily dismissing theory and examples that they perceive as irrelevant to clinical
286 life. Unfortunately, particularly in the pre-clinical stages of the curriculum, students often
287 lack their own clinical experiences and are therefore reliant on being provided with
288 scenarios.[36,37] However, similarly to others,[35] we have also found that asking students to
289 reflect on their own experiences more successfully engages them in the challenges they will
290 encounter as a veterinarian. We therefore face the conundrum that we want students to be
291 able to use their own experiences as triggers for professional identity development, but
292 these need to explicitly relate to veterinary clinical practice at a time when students lack
293 relevant clinical experience. Early exposure to clinical areas, such as integrating problem-
294 based learning with clinical placement, can help to achieve this. In the model described by
295 Boudreau et al,[38] medical students from different year groups meet to discuss the
296 challenges they have witnessed or experienced in the clinic. As well as authentic personal
297 experience, this model also emphasises the importance of a safe space for reflection, the
298 value of skilled facilitation, and the advantages of reflecting through group dialogue rather
299 than privately.[37] This benefit of socially constructed reflection was initially surprising, as it
300 seemed to contradict the need for privacy in constructing genuine and authentic reflections.
301 However, the experience described by Bernabeo and others[37] mirrors our own experience:
302 students (and graduates) struggle to identify experiences that are of interest to examiners
303 and peers, when doing this in isolation.[39] In contrast, presenting their experiences to a
304 group, and encouraging peer discussion, exposes elements of the experience that the
305 presenter had not otherwise identified, or had dismissed as irrelevant or uninteresting.
306 Trained facilitators who can foster a safe environment for shared reflection are therefore

307 key to maximising the benefit of reflective self-analysis and the role of this in professional
308 identity development.
309
310 *Faculty development*
311
312 The final element for successful curriculum implementation is embedding these concepts in
313 an institution-wide culture.[11,40] The power of the hidden curriculum risks undermining the
314 efforts of well-planned curricula by the omission of concepts of professionalism in the
315 teaching delivered by clinical faculty,[17,41] inconsistent messages in teaching and assessment
316 regarding the significance of professional identity in complex decision-making, and clinical
317 faculty and university promotion strategies that appear to reward unprofessional
318 behaviour.[41] Faculty development, at all levels, is therefore a key component of managing
319 change, and integrating professional identity across all aspects of the curriculum, rather
320 than being situated in isolated modules.[11]
321
322 Previous work has demonstrated that clinical faculty have concerns surrounding their
323 perceived competence in integrating professional and non-technical elements into their
324 teaching.[42] This is understandable, given that their professional identity is frequently one
325 characterised by Castellani and Hafferty's "Academic" set of priorities, and thus they will
326 typically have focused their own learning and development on their technical competence.[29]
327 Instead of developing clinical faculty to instruct students on the core cognitive knowledge
328 needed for engaging with wider stakeholders (such as the fundamentals of veterinary
329 business), faculty development can be focused on the hidden curriculum elements that
330 reinforce an identity constructed solely on diagnostics and gold standard therapy. Personal
331 experiences of environmental challenges complicating patient care represents an example
332 of a common area that most veterinarians have experienced, but may not recognise as
333 being of value to veterinary students' education. Faculty development interventions that
334 inform educators of curriculum goals in terms of professional identity development may
335 therefore encourage the use of examples in teaching they were previously considered not
336 relevant or useful. Amongst course leaders, developmental support is necessary for
337 designing learning outcomes, aligned teaching and assessment methods that encourage
338 complex thinking rather than single correct solutions to problems, and incorporate students'
339 reflection and analyses of their experiences.
340
341
342 **The Professional Studies Curriculum.**
343
344 In order to implement these fundamentals of curriculum design, our professional studies
345 approach is constructed around the overriding learning outcome of competence in resolving
346 complex professional dilemmas. This outcome represents something tangible to the
347 students; difficult situations (such as the client who cannot pay, and conflicting opinions
348 surrounding euthanasia) are something they frequently observe in the clinic, and therefore
349 these experiences provide a focus for reflection. Developing this overriding learning
350 outcome also enables the curriculum to be structured with progressively increasing
351 complexity, as students first identify the implication of their own values in a professional
352 dilemma, and progress to being encouraged to explore the needs of others, before finally

situating this problem-solving in the clinical environment. The following curriculum elements are necessary to achieve this outcome:

- Professional reasoning frameworks for the systematic problem-solving of professional dilemmas.
- Content necessary to engage with the needs of stakeholders, and understand these in relation to one's own professional identity: the veterinary business, human-animal bond, clinical reasoning and evidence-based medicine, animal welfare, client and personal values, the professional and their obligation to society.
- Teamwork and communication skills necessary for working collaboratively to determine and implement clinical and professional decisions.
- Critical reflection on practice to underpin ongoing development, in particular relating to the developing professional identity as the individual encounters different professional environments.

We will now discuss how we have developed our teaching, learning and assessment strategy to progressively support students through the three phases of the veterinary curriculum: pre-clinical (our first and second years), clinical theory (third and fourth years) and final (5th) clinical rotation year (summarised in Table 2). For each phase we include the expected outcome (and level of complexity), taught content, teaching methods and assessment strategy. We have also included the challenges experienced in implementing these changes, and the modifications we have made as a result. The strategies presented represent the result of a 15-year period of action research and iterative development. Graduate education and lifelong professional development, while important, are beyond the scope of this paper.

Phase 1: The Pre-Clinical Years

The teaching methods in Phase 1 of the Professional Studies curriculum reflect students' cognitive and emotional development at this education stage. They are therefore not asked to empathise with multiple stakeholders, but are expected, by the end of the phase, to be able to rationalise a professional situation from two viewpoints (their own and one other), and to be able to explain the reasons for their own perspective. Veterinary ethics teaching introduces the frameworks necessary to be able to do this systematically; ethical dilemmas relating to the use of animals in farming and research are presented, and students identify stakeholders and consider the immediate and broader consequences of various courses of action. Group work is an important element across the course, and therefore another key learning outcome for this phase relates to competence in teamwork and team communication. Students are expected to be able to apply models of well-functioning teams (using the Belbin model)[43] and effective communication (using an adaptation of the Calgary-Cambridge system[44]) to support their group work.

As previously mentioned, fundamental to professional identity formation is a process of identifying one's own professional values and priorities, and exploring identity alternatives. Reflecting the need to stage the complex process of identity formation, the aims of Phase 1 are to form identity conceptualisations largely in a decontextualized manner, before environmental complexity is added later in the course. To initiate students' exploration of identity, and to help them to identify their own perspective so that they can rationalise their

400 viewpoint in a professional or ethical dilemma, one of the first activities in the RVC
401 curriculum is titled "The Good Vet". Similar to retirement speech activities reported
402 elsewhere[45], this activity encourages students to define their aspirational professional
403 identity, and explore the set of competencies, values and priorities they want to achieve for
404 their professional lives. Performed in groups, this highlights where differences exist
405 between individuals, introducing early notions of multiplicity and identity heterogeneity.
406
407 Consistent with the fundamentals for successful curriculum design, taught sessions in ethics,
408 communication skills and teamwork are followed by opportunities for experiential learning
409 and reflection. In earlier iterations of the curriculum, we had previously thought that
410 scenarios from veterinary practice would be the best for engaging students in analysis and
411 reflection. However, even though these seemed to be better aligned with their career
412 aspirations, the students struggled to appreciate how they could find themselves in similar
413 situations, and we have concluded that the environmental influences on communication,
414 teamwork and professional reasoning need to be experienced first-hand rather than simply
415 presented. Student feedback, reported in the literature and evident in our own institution,
416 also demonstrates a preference for learning this in situ, and not in the classroom.[46] We have
417 therefore changed our approach to one focusing on the students' own curriculum
418 experiences for reflective activities. For example, the content of the ethics course was
419 selected because students subsequently experience relevant scenarios during external farm
420 placements, and when using animals in practical classes and dissections. Group reflective
421 activities are constructed to coincide with these experiences, encouraging students to apply
422 their earlier taught content to analyse the ethical dilemmas or communication challenges
423 encountered. They also use their teamwork teaching to reflect on their competence in
424 working as a team in their small group sessions throughout this phase, which has the
425 advantage of embedding the taught concepts curriculum-wide, rather than being restricted
426 to the discrete professional studies sessions. Formative reflections are aligned with the
427 summative assessment for this stage of the curriculum, in which students reflect on their
428 developing competence in teamwork, communication or ethics across the whole
429 curriculum, and how they are progressing towards their aspirations of the good vet,
430 identified at the start of the course.
431
432 *Phase 2: The Clinical Years.*
433
434 By the end of this curriculum stage, students are expected to be able to increase the
435 complexity of their professional decision-making, and engage with broader perspectives,
436 moving from Kegan's stage 2 to stage 3. Taught content therefore provides the necessary
437 knowledge to be able to consider various additional stakeholders in their decision-making,
438 such as the needs of the veterinary business, the role of the human-animal bond and a
439 veterinarian's responsibilities to the profession (see Table 2). Rather than learning outcomes
440 that encompass isolated competences (ethical reasoning, communication skills), at this
441 stage they represent a more integrated approach, with students expected to be able to
442 reason a problem and communicate their decision with a simulated client or colleague.
443 Although formal teaching and assessment are in-classroom, during this phase the students
444 start their 26 weeks of extra mural studies (EMS), in which they undertake 2-week blocks of
445 external placement in veterinary practices. In-context complexity is therefore introduced in
446 the teaching strategy, and students are asked to reflect on the challenges and management

447 of professional dilemmas, communication skills, business practice and teamwork they
448 observe in these clinics. This early period of professional socialization is also important for
449 students to start to explore identity alternatives, and select appropriate and preferred role
450 models for their own identity formation.
451
452 The summative assessment for this phase is very transparent, and makes explicit the need
453 to discuss the needs of various stakeholders in reasoning and decision-making. The topic for
454 the written examination at the end of this phase is pre-released, (in the form of a
455 professional dilemma), which we hoped would drive students to engage in the processes
456 necessary to take a multi-perspective and context-dependent approach to their problem-
457 solving, rather than prioritise learning and retention of facts (since those that are relevant
458 to the examination can be accessed after the scenario has been released). The assessment
459 method for communication skills is similarly transparent, and also intended to emphasise to
460 students the importance of learning to use frameworks for effective communication and
461 professional reasoning. However, despite this assessment approach, we have identified that
462 without well-aligned teaching methods, assessment alone was insufficient to guide student
463 learning, and students appear to need much more scaffolding to help them move beyond a
464 focus on diagnosis and its treatment, engage with the different perspectives of stakeholders
465 in their decisions, and integrate different parts of the professional studies curriculum. We
466 have therefore made several modifications to the teaching strategy to support students in
467 forming these links, described later in this section.
468
469 During this phase we frequently see evidence of identity confusion and dissonance that has
470 been reported by others as students enter the clinical environment, particularly if this
471 introductory professional socialization is unsupported.[47,48] These demonstrate the
472 challenges experienced by students in developing their professional identity from a narrow
473 to a broader conceptualisation, and working with veterinarians and other stakeholders with
474 different priorities from their own. Students often express discomfort at the apparent
475 prioritisation of academic advancement over animal welfare in case management decisions
476 in the University teaching hospital; they have also expressed distress when faced with the
477 euthanasia of healthy or treatable animals because of a client's financial limitations. Overly
478 dualistic notions of the 'right' course of action are also apparent, and students frequently
479 ask how best to convince a client of their perceived correct resolution of a professional
480 dilemma. One student had witnessed a client who refused to consent to euthanasia
481 provided by barbiturate injection, instead wishing to shoot his own dog. She asked how we
482 would persuade the client to consent to barbiturate injection: to her, the only appropriate
483 veterinary action. We have also seen that students struggle to respond to a client asking,
484 "What would you do if it was your dog?" representing confusion in rationalising the
485 paternalistic identity of the veterinary surgeon within a relational model of care that
486 respects client autonomy. It also represents a student struggling to move beyond Kegan's
487 stage 3 of development, as they are more comfortable seeking a resolution from a role
488 model than being comfortable in their own identity priorities. Our research with early
489 career veterinarians suggests that a disconnect between the 'right thing to do' as
490 represented by classroom examples of evidence-based treatment, and that which
491 represents high quality primary care medicine, is encountered frequently and can lead to
492 notions of failure.[25] The teaching in this phase must therefore help students to use their
493 workplace learning to explore and validate identity alternatives. As preparation for entry to

494 the clinical environment, delivered content also includes the concept of human factors (the
495 impact on technical and professional competence of fatigue, emotions relating to patient
496 suffering, and environmental pressures), emphasising their potential negative impact on the
497 alignment of an individual's values and behaviours.[49]
498
499 With this in mind, the taught content for this phase starts by building on the professional
500 identity material introduced in Year 1. The heterogeneous model of professional identity
501 students[29,50] is presented to the students in the context of valuing other, attempting to
502 support the students when they encounter veterinarian's priorities that are in conflict with
503 their own, and also attempting to ameliorate conflicts between groups defined by different
504 professional priorities.[51] When students have been exposed to this model, they have also
505 identified that their own personal identity ideals may well differ from those of their
506 educators; it therefore has additional value in encouraging students to consider the
507 identities of their role models. At this stage we also introduce the concept of autonomy and
508 its implications for professional decision-making. Students seem to struggle with the
509 concept of autonomy and its importance to the professional role, as it is in apparent
510 contradiction with the concept of there being a "best" way to manage disease. The
511 framework of professional reasoning that is used emphasises that although there may be
512 more than one "correct" answer to a problem, depending on the professional identity of the
513 veterinarian, the values of the client and the needs of the business, the students must
514 commit to a resolution. Furthermore, in summative and formative assessments, marks are
515 awarded for students' commitment to an action, and their ability to explain their selection
516 in the context of alternatives that are also appropriate. They are also rewarded for
517 acknowledging their own priorities, and how these are rationalised in the social context of
518 the dilemma presented. This therefore represents the highest level of cognitive and
519 emotional development. Students are guided through their assessments to move beyond
520 Perry's[31] concept of multiplicity (there are multiple equally correct answers) to one of
521 relativism (the professional has the ability to use their discretion and select a course of
522 action that depends on context). This also encourages them to develop towards Kegan's[33]
523 stage 4 of development: that the choices made by the individual are independent of what
524 another professional may believe to be correct.
525
526 Integration of taught content from different areas is supported through the use of peer-to-
527 peer communication skills sessions. In this curriculum intervention, we have increasingly
528 made use of communications practice not only to integrate didactically delivered content
529 with communication skills, but also to encourage students to access information that they
530 have not been "taught". Following positive student feedback with sessions integrating
531 history-taking and clinical reasoning, and following the lead of others in this area[52] we have
532 constructed communications sessions that additionally incorporate a variety of professional
533 dilemmas, including clients requesting antibiotics for an unseen patient and homeopathic
534 medications, and challenging communications surrounding complaints, mistakes, and
535 talking about money. Examples are designed such that students will need to access
536 resources, such as relevant professional and legal frameworks, to help them determine how
537 they are going to resolve the scenario. They are also designed so there is no single best way
538 of managing the case. Learning outcomes therefore integrate accessing information
539 (incorporating a lack of 'knowing everything' into a client communication), decision-making
540 in a framework of uncertainty and professional autonomy, teamwork (reaching a decision

541 where different opinions may be present) and communication (communicating a
542 professional issue to a client or colleague).
543
544 Building on the experiential learning developed in phase 1, early clinical experiences are
545 used to stimulate reflection and contextualise the students' understanding and formation of
546 professional identity, through a series of formative assignments. In the first of these,
547 students are prompted to look for situations where the veterinarian must engage in
548 interactions that extend beyond a focus on diagnostics and treatment. The students must
549 analyse this experience, specifically incorporating at least two areas of the professional
550 studies curriculum (the core areas listed in table 2). For example, a student may wish to
551 reflect on a consultation in which a veterinary surgeon must deliver some bad news. They
552 may analyse the quality of the communication, but would additionally need to consider the
553 significance of the interaction, for example relating to the veterinarian's professional
554 identity, or their own priorities and notions of success. Students appear to find it particularly
555 challenging to incorporate the implications for the veterinary business in their analyses, and
556 therefore a second reflective assignment is targeted specifically at engaging with this area.
557 This assignment, described in more detail elsewhere, is specifically designed for students to
558 consider the implications of the veterinary business for the early career veterinarian.[27]
559
560 *Phase 3: Clinical Rotations.*
561
562 The clinical rotation year is particularly significant for identity development. The desired
563 outcome is a professional identity that is socially constructed and contextualised, and not
564 exclusively defined by personal priorities.[53,54] The experiences in the clinic offer the
565 potential for students to engage in the wider influences on clinical decision-making,
566 incorporating into their learning the needs of the client, financial restraints, and
567 environmental limitations on patient management. However, although there may be a
568 potential for this development to take place, students find it easier to learn the discipline
569 specific knowledge and technical skills of the workplace, and fewer appreciate the complex
570 learning outcomes relating to identity development.[55] This may relate to their choice of role
571 models as those who also prioritise specialist knowledge and technical competence, a
572 dependence on role-models as the source of the best answer (Kegan's stage 3), or a failure
573 to move from dualistic notions of learning, retaining the identity ideals associated with
574 single-best treatment and not context-specific variation. The experience of professional
575 socialization therefore needs to be carefully structured, such that role models are selected
576 who better embrace broader notions of professional identity and model the complexity
577 associated with professional decision-making.[21] Student opinion frequently demonstrates a
578 preference for learning their professionalism in the clinical environment, and particularly
579 from role models,[46,56] indicating their receptiveness to support in identity formation and
580 professional behaviour at this time. However, the literature also highlights the frustrations
581 experienced by students as they enter clinical rotations, particularly relating to the "double
582 standards" of being "subjected to professionalism education" while witnessing
583 unprofessional behaviour amongst faculty.[15,57] If students are unsupported at this time, the
584 demands of the clinic contribute to the well-documented decline in students' empathy
585 during the clinical year.[58] It is also increasingly recognised that formal interventions are
586 needed to support students' emotional resilience in managing the apparent identity
587 dissonances they encounter in this environment.[20,50]

588
589 Our strategies for providing this support represent a combination of an appropriate
590 assessment framework, and opportunities for reflective practice, both of which are crucially
591 dependent on institution-wide faculty development for success. It is particularly the case
592 during final year rotations (free from didactic teaching) that feedback provides a significant
593 component of student learning. The feedback provided to students on their performance in
594 the clinic will guide their learning and therefore direct their identity formation. A key
595 element of developing the professional studies curriculum in the final year has therefore
596 been faculty development to ensure that rotation feedback supports a common
597 conceptualisation of the veterinary professional identity as one that is heterogeneous, and
598 built on rationalising conflicting needs in a complex and challenging environment.[21] For
599 professional identity formation to be embedded in this curriculum phase, it needs to be
600 consistently apparent in rotation feedback. As part of our faculty development strategy, we
601 therefore tasked clinical rotation leaders with the generation of an assessment framework
602 for rotation professionalism teaching.[59] As well as encouraging faculty to reflect on their
603 understanding of professionalism in student assessment and feedback, this activity also
604 helped to foster a sense of ownership of professionalism concepts in rotation teaching, with
605 ideas for teaching generated. A rethinking of appropriate teaching material was seen;
606 patients without a diagnosis or resolution, and difficult or upset clients were identified as
607 having (previously unappreciated) value for students.
608
609 We have found faculty to be particularly engaged in support for professionalism teaching
610 when this is targeted at difficult conversations. Faculty demonstrate perceptions of low
611 confidence in this area,[42] often reporting that feedback on professionalism feels more
612 personal than feedback on knowledge or technical competence. This blurring of the
613 distinction between "the good person" and "the good doctor" has been reported
614 previously,[57] and can be addressed by the availability of better defined assessment criteria
615 that focus less on normative personal values and are underpinned by a robust theoretical
616 framework. The framework we generated emphasises five areas: interpersonal
617 communication and interactions, awareness and respect for different values and priorities,
618 taking responsibility for self, teamwork, and self-awareness of one's own identity.[59]
619
620 Our approach to supporting reflective practice in our final year students remains a work-in-
621 progress. While there is extensive support in the literature for the use of reflective
622 portfolios,[60] we have been keen to avoid reported pitfalls, such as 'forced' or inauthentic
623 reflections (inclusion of material that the students perceive will get them a better grade,
624 rather than honest accounts of their development), inadequate feedback, and students
625 perceiving that the efforts required are disproportionate to the outcomes achieved.[17,61,62] In
626 common with other authors[20,37,63] we also firmly believe in the advantages of socially
627 constructing reflections on professional identity formation, rather than this being a uniquely
628 solitary experience. However, we also recognise that by reflecting in a group, although this
629 may be empowering in helping students to express views they might consider unimportant
630 or trivial, there is also a possibility that novel or unusual ideas, created by individuals, may
631 be homogenised by the group and lost. In the current culture of veterinary rotation teaching
632 (students dispersed off site or around the hospital), timetabling prioritised time for group
633 reflection represents a significant curriculum challenge, and the transient relationships
634 formed in short block rotations do not encourage the safe environments needed. Although

635 peer discussion and reflection would be the ideal, we have recently introduced sessions in
636 which students reflect on their developing competence with their tutors. Further faculty
637 development is needed to ensure this incorporates professional identity development, and
638 not simply the technical and knowledge competencies. More work is needed in the area of
639 professional identity formation during the clinical rotation year, which would be supported
640 by further sector-wide engagement in this discourse.
641
642

643 **Conclusions and Lessons Learned**
644
645 The aim of this paper was to explore relevant literature from medical education and the
646 veterinary profession to present a best practice approach to curriculum development to
647 support professional identity formation. In addition, we have included elements from our
648 own curriculum to illustrate and exemplify how these fundamentals of curriculum design
649 can be achieved. Finally, we have also incorporated our reflections on the iterative process
650 of curriculum development, including what has worked and what has not, and where the
651 challenges of implementing an optimal curriculum may lie.
652
653 The lessons we have learned from this process include the welcome shift away from
654 constructing a curriculum to teach students professional behaviours (something our
655 students, like those vocal in the medical literature, strongly resented), to designing a
656 curriculum to support our students through the challenges of consistent adherence to the
657 morals, values and priorities which we know they possess. We have also experienced the
658 sentiment frequently reported in the literature that students can perceive professionalism
659 teaching as "fluffy", patronising, and something they know already.[46,57] As a consequence,
660 we have revised our approach to acknowledge earlier student achievements in their
661 developing professional skills, incorporate a strong cognitive element (in particular the
662 processes of resolving complex professional dilemmas), and ensure this cognitive element is
663 represented in all the teaching and assessment activities. We have agonised over the
664 challenges, in particular of ensuring all the content is explicitly relevant to being an early
665 career veterinary surgeon, realising that even the use of genuine examples was insufficient
666 to consistently engage students in the challenges of being a professional. We have thus
667 redirected our efforts, to ask students to collect their own personal experiences of being a
668 professional in different veterinary environments. We have also recognised that asking
669 students to engage in reflection and analysis of their experiences in the professional
670 environment is best carried out in a way that incorporates dialogue and a socially
671 constructed reflection, rather than when carrying out this activity as a private, written
672 reflection.
673
674 Work is ongoing to improve the support of veterinary students' identity formation, and
675 therefore without doubt further curriculum improvements will be made, and reported in
676 the literature. We have more work to do, particularly in supporting students in clinical
677 rotations, through improved reflection strategies and embedding conversations about
678 context and uncertainty in clinical discussions. Similarly, embedding the concepts discussed
679 in this paper across the entire curriculum, rather than (as is currently the case) being
680 represented chiefly in the discrete professional studies course, is a project that is currently

681   in progress, principally via faculty development and curriculum redesign. We hope that this

682   paper provides a platform from which future curriculum development strategies develop.

683

684

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843

844 **Table 1**

845 Principles of Curriculum Design that will support professional identity formation.

846

A Successful Curriculum Will:
• Define identity goals based on the heterogeneous nature of the veterinary identity

• Progressively increase the level of complexity of professional issues and their analysis, with developmental learning outcomes:
    ○ Phase 1: Students reason a scenario according to two perspectives, their own and the values of one other stakeholder
    ○ Phase 2: Students reason a scenario from the perspectives of several stakeholders, and integrate reasoning, communication and teamwork
    ○ Phase 3: Students apply an integrated, multiperspective approach to professional reasoning, in the context of environmental complexity

• Incorporate reflection on authentic and clinically relevant professional issues
    ○ Provide safe spaces for socially constructed reflection, guided by trained facilitators
    ○ Use students' own experiences as triggers for reflection and application of core theory

• Have institution-wide implementation and incorporate faculty development

847

848

849 **Table 2**
850 Key curriculum content and sample teaching during the three phases of the RVC curriculum.
851

	Curriculum Content	Sample Teaching Session
Phase 1: Pre-Clinical Years 1 and 2	• Teamwork • Communication Skills • Ethical reasoning	During extra-mural farm visits: *In your group, reflect on the challenges you might encounter in this new environment. How does your knowledge of teamwork theory help you participate and contribute to this new team?* *On returning from this placement: Did you identify any ethical or welfare dilemmas? Analyse these using the ethical framework from your ethics lecture. What are the consequences for the animal, farmer and public?*
Phase 2: Clinical Theory Years 3 and 4	• The heterogeneous veterinary identity • Professionalism and autonomy • Veterinary business • Animal behaviour and welfare • The human-animal bond • Personalities and values in the workplace • Ethical reasoning • Communication skills • Teamwork	In a communication skills workshop: *A client asks you for a repeat prescription of antibiotics. In your group, consider this request from the perspectives of the client, patient, veterinary practice, profession and society. Decide what action you will take, and how you will communicate this.* The students then role-play the scenario, with a simulated client. *How effectively was this communication managed? Consider the interaction from the perspectives of both client and veterinarian.*
Phase 3: Clinical Rotation Year	• Influence of the clinical environment on professional practice	In rotation assessment feedback sessions: *How successfully do you think you worked as part of a team? Think about your rotation group peers, and colleagues in the hospital. What challenges did you encounter to high quality teamwork? What are your goals in this area for the next rotation?*

852