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1 **Title:**

2 Continuing Professional Development: Researching Non-Technical Competencies can support

3 Cognitive Reappraisal and Reduced Stress in Clinicians

4

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12   **Abstract**

13   Generic professional capabilities (non-technical competencies) are increasingly valued for their links

14   to patient outcomes and clinician wellbeing. This study explores the emotional change, and

15   practice-related outcomes, of participants of a veterinary professional key skills (PKS) Continuing

16   Professional Development (CPD) module. Reflective summaries produced by participants were

17   analysed. A change in emotion, from 'negative' to 'positive', was the focus of analysis. Sections

18   regarding these emotions were thematically analysed. Analysis was performed on 46 summaries.

19   Three themes were identified: 'the PKS module' (centred on reluctance becoming surprise and

20   stimulation), 'developing non-technical competencies' (unease to confidence) and 'stress and coping

21   through a reflective focus' (anxiety to harmony). The changing emotions were connected to positive

22   cognitive reappraisal and often behaviour changes, benefitting self, practice, clients and patients.

23   The PKS module teaches participants to reflect; a new and challenging concept. The consequences of

24   this enabled participants to understand the importance of professional topics, to be appreciative as

25   well as critical, and to enjoy their job. Importantly, the module stimulated coping responses. Better

26   understanding of roles led to participants having more reasonable expectations of themselves, more

27   appreciation of their work and reduced stress. This research supports more attention to professional

28   skills CPD for health professions.

29 **Introduction**

30 The need for clinical professionals within human and animal healthcare to maintain their ability to

31 practise, through lifelong learning, is well-recognised. Learning should be competency-based and

32 relevant to patient needs and the workplace (Miller and others 2010, Schostak and others 2010). A

33 component of professional capability relies on up-to-date knowledge and practical technical

34 competence, which historically were the foci of continuing development in all medical disciplines

35 including anaesthesia and nursing (Fletcher and others 2001, Lee 2011). However, it is increasingly

36 recognised that high quality patient outcomes are associated with more than knowledge and

37 practical competence. Literature suggests the capable human healthcare clinician must integrate a

38 range of competencies, attitudes and behaviours, including leadership (Clark and Armit 2010),

39 mindfulness (Dobkin and others 2016), interpersonal (Di Blasi and others 2001) and interprofessional

40 (Wilcock and others 2009) expertise.

41 The collective title 'non-technical skills', developed in the airline industry for this group of skills, is

42 contentious (Kodate and others n.d., Nestel and others 2011). However, in its recent consultation,

43 the UK General Medical Council referred to 'generic professional capabilities' as synonymous with

44 the term 'non-technical skills' (GMC 2017), and the term has been used widely in medicine with

45 reference to anaesthesia, emergency care (Flin and Maran 2004), surgery (Kodate and others 2012),

46 and the education of medical students (Harvey and others 2015). In parallel, the veterinary literature

47 has referred to non-technical skills (Lloyd and King 2004) or competencies (Lewis and Klausner 2003)

48 and this latter term is adopted here.

49 Excellence of performance related to these non-technical competencies is associated with

50 professional development and wellbeing. Within human healthcare, a lack of self-awareness

51 (Thistlethwaite and Spencer 2008), poor communication and poor teamwork (Firth-Cozens 2003)

52 have all been shown to contribute to stress, and stress results in reduced ability to take in

53   information (Heinström 2006), reduced clinical performance and poorer patient care (Delany and

54   others 2015).

55   Although much of this cited literature relates to human healthcare, similarities with veterinary

56   healthcare suggest an equivalent importance of non-technical skills, for which research has begun to

57   provide an evidence base (Cake and others 2016). Non-technical skills are important to

58   veterinarians in several ways, including: employer satisfaction (Danielson and others 2012), good

59   communication leading to fewer complaints (Radford and others 2003, Russell 1994); and good

60   leadership and interprofessional working reducing errors (Kinnison and others 2015, Oxtoby and

61   others 2015).

62   Like initial clinical training, it can be hypothesised that continuing professional development (CPD)

63   needs to focus on more than knowledge and practical ability; however a veterinary focus on the

64   post-graduate non-technical skill set is currently lacking (Oxtoby and others 2015). Technical and

65   non-technical skills will only be useful if delivered by capable and compassionate health

66   professionals. A worrying trend for all health professions is the levels of stress and mental health

67   problems (Firth-Cozens 2003), especially for veterinarians (Bartram and Baldwin 2010). Therefore,

68   structured CPD programmes have started to be individual clinician-centred and to include

69   development of non-technical competencies, through reflective consideration of these aspects in an

70   individual's own practice, and stimulated behaviour change (Armson and others 2015, May and

71   Kinnison 2015).

72   The Royal College of Veterinary Surgeons (RCVS) has developed a Certificate of Advanced Veterinary

73   Practice (CertAVP), targeted on general practitioners. The certificate includes a compulsory

74   Professional Key Skills (PKS) module alongside a selection of clinical modules (for example, small

75   animal surgery). Table 1 lists the range of PKS learning objectives.

76   [Insert Table 1 about here]

77 PKS is not taught, and is instead based on adult learning theories, requiring participants to research

78 and write reflective essays linked to module objectives. The series of broad essay titles is made

79 available to participants at enrolment. Learning and assessment is based on Gibbs (1998) reflective

80 learning cycle. Participants select an essay title that provides a framework for a personal experience

81 to be described (Description), on which they reflect, in terms of their feelings (Feelings) and what

82 went well and not so well (Evaluation), in the light of relevant literature and theories (Analysis). The

83 cycle includes discussions with colleagues to gain ideas on possible alternatives (Conclusion), to plan

84 for how they will handle such situations in the future (Action Plan). Learning is therefore self-

85 directed, and the information participants gather and the opinions they form arise from their

86 individual choices, interpretations and reflection upon experience. In support of their learning, they

87 have access to a virtual learning environment where they can view relevant "starter" articles and

88 partake in discussion boards with peers and tutors, but they are encouraged to engage in their own

89 searches for peer-reviewed material, reports and books relevant to their chosen foci within the

90 broad essay themes.

91 The reflective essays are graded and the participant receives detailed formative feedback. If judged

92 unsatisfactory, participants use the feedback to improve the written piece before completing the

93 next. The structure is a variant of the patchwork text approach to assessment (Winter 2003). The

94 participants produced nine PKS essays before a final summative piece. The theme for this final essay

95 is the nature of their learning and how they have begun, or plan, to behave differently in practice,

96 based on their reflections on their experiences, the literature and the feedback from all formative

97 essays.

98 Reflection, a retrospective "process that creates greater understanding of self and situations to

99 inform future action", is generally viewed as important in developing medical professional expertise

100 (Sandars 2009 p. 685). Reflection has been reported to improve examination results in areas such as

101 obstetrics and gynaecology (Lonka et al 2001) and as beneficially drawing students' attention to

102   professional identity (Niemi 1997). However, there is little evidence of any benefits of reflection on

103   long-term practitioner development and clinical care (Bernard and others 2012, Sandars 2009). It has

104   been reported that an educational programme targeted on primary care physicians, focused on

105   three reflective practices (mindfulness, narrative medicine and appreciative inquiry), led to

106   sustained improvements in clinician empathy and wellbeing (Krasner and others 2009).

107   Initial research with outcomes of the PKS module revealed that the reflective study of non-technical

108   competencies produced clinician behaviour change, leading to greater confidence, improved client

109   satisfaction and patient outcomes, and a reduction of stress (May and Kinnison 2015). The

110   importance of this latter observation led to this further work on the emotions experienced by PKS

111   participants. It was hypothesised that the reflective process which supported a better

112   understanding of the professional role had stimulated a change in the emotions felt by the clinicians

113   as they engaged with their daily tasks. Further, it was hypothesised that examination of changes in

114   emotions described within participant essays would enhance understanding of how stress was

115   reduced, and their contribution to the previously reported improved personal, client and patient

116   outcomes. The aim of this research was to identify common themes associated with a change from

117   the negative emotions of many participants at the start of the programme to the more positive

118   emotions they described after completion of the PKS module.

119   **Methods**

120   <u>Participants</u>

121   All individuals (120) who had completed a PKS reflective summary (the first cohort submitted in

122   2009) and had not taken part in prior research, were asked, via email in October 2015, for consent

123   for their summaries to be analysed. Reminder emails were sent three and six weeks afterwards.

124   Emails were sent by TK, who was described as an educational researcher, working alongside SM,

125   Module Leader of PKS. TK had not been involved in the CertAVP.

126   Participants were informed of Ethics Committee approval (URN 2015 1360), and that the research

127   would not impact their further studies. Summaries were retrieved for individuals who returned a

128   completed consent form, and stated that their expressed opinions remained their genuine views.

129   Summaries were collated by an intermediary and anonymised prior to distribution to the research

130   team for analysis.

131   <u>Analysis</u>

132   The targets of analysis were instances where there was an identified change from negative to more

133   positive feelings about a situation within a participant's summary. This required the recognition of

134   words describing emotions, and a decision on how these should be classified.

135   A search of the literature yielded a list of 127 terms (Gallagher and others 2003, Plutchik 2001, Russ

136   2013) which were used as a basis for identification of emotions when reading the summaries.

137   Emotion wheels (Russell 1980, Yik and others 1999) organise emotional terms on a spectra of

138   unpleasant to pleasant, and active/intense to deactivated/mild. In this study, the focus was on the

139   pleasantness of the emotion (positive or negative) rather than its intensity. Some terms were

140   ambiguous, such as 'surprise', and were categorised in context. Additionally, the literature-derived

141   list of emotional terms required updating based on the summaries. Through reading the summaries

142   and highlighting emotional terms in different colours based on their pleasantness, instances where a

143   negative emotion became a positive emotion were identified and recorded.

144   Once a negative to positive sequence was recorded, the larger context of the emotional change was

145   identified. Where appropriate, thematic analysis following the method of Braun and Clarke (2006),

146   was conducted on the sections of the summary relating to the emotional change to clarify the

147   factors identified by participants as being a cause of the change in emotion. This involved reading

148   and re-reading of these sections, coding the data, collating similar codes and generating themes and

149   sub-themes which explained the context and reasons for a change in emotion. Where described, the

150   outcomes associated with the emotional change were also analysed.

151   The analysis was conducted by TK, an educational researcher within the veterinary field. TK used

152   simple highlighting, notes on the essays, and excel to develop codes and themes; her non-clinical

153   background facilitated an inductive and unbiased approach to this research. This research is based

154   on a constructivist ontology and interpretivist epistemology (Waring 2012). As such, it is founded on

155   the concept of the co-construction of knowledge, and does not suggest that there is one correct way

156   to analyse qualitative data thematically. This method was chosen in order to aid the aggregation of

157   initial coded fragments into larger meaningful themes. Detailed descriptions of themes and extracts

158   from the summaries (with participant codes) are provided to demonstrate the analysis' reliability. In

159   addition, iterative discussions with the co-author, an experienced veterinary surgeon, led to sense-

160   making and face validity of the emerging themes and slight reconfiguring of sub-themes to aid

161   understanding.

162

163   **Results**

164   Research consent was received from 46 participants (Table 2).

165   [Insert Table 2 about here]

166   During analysis, 89 terms were added to the list of emotion-related terms. The vast number of terms

167   within the summaries suggests a large range of emotions felt by veterinariansand an independence

168   and richness in their descriptions.

169   There were three overarching themes associated with changes in emotion. Within these themes,

170   several sub-themes were developed which explained the change in emotion.

171   Theme 1 - PKS Module

172   The unique opportunities of the CertAVP motivated participants to enrol. For example, individuals

173   had experienced a plateau of learning at work, or through traditional CPD, but anticipated benefits

174   of the modular structure of the CertAVP, which allows for part-time study. Motivations such as

175   "relishing the challenge" were cited, in conjunction with performance goals including improved job

176   prospects.

177   However, participants tended to describe their initial emotions towards the Module as negative,

178   namely "reluctance". Over the course of the module, individuals noticed a reversal of their opinions.

179   The module awoke a new emotion of surprise at its usefulness to their day-to-day life, driving the

180   participants on with their studies. Sub-themes and examples related to this theme are outlined in

181   Table 3.

182   [Insert Table 3 about here]

183   Below are a selection of quotes that relate to the sub-themes:

184   *"Initially I was sceptical about the value and relevance of the subjects…   As I progressed through the*

185   *module essays I discovered new areas of knowledge and interest I was unaware of. I found that the*

186   *essays titles I found most difficult were also the ones I found most stimulating; perhaps my*

187   *trepidation had been due to ignorance in these subject areas." (559)*

188   *"On nearing completion of the module I am realising that the skills covered are those which make the*

189   *difference between success and failure in practice." (561)*

190   This change was stimulated by writing the essays, and especially through developing self-directed

191   learning and reflection. Reflection was a new experience for many, and although initially challenging

192   and uncomfortable, it became a tool to drive forwards participants' careers:

193   *"I feel the most major personal development I have made during this module is learning how to*

194   *reflect….I found it a frustrating process initially, but once practiced have found it a useful tool when*

195 *analyzing my handling of different clinical situations and from this analysis what direction I need to*

196 *take to be able to improve my skills." (571)*

197 The outcome of recognising the importance of, and reflecting upon, these topics related to

198 becoming a better veterinary surgeon. Participants suggested this had benefits for their practice and

199 clients, as well as for themselves. For example, increased motivation and the formation of a fully

200 integrated professional identity:

201 *"Before this module, I mostly felt like a vet when doing clinical work. With a more solid non-clinical*

202 *base I now also feel like a vet outside clinical practice, in how I communicate, reason, interact with*

203 *people, research and learn, and conduct myself as a professional." (591)*

204 Theme 2 - Developing Non-Technical Competencies

205 In-depth analysis was not undertaken for this theme as the reflective summaries varied in their

206 topics, causing challenges in comparing sub-themes. The specific factors driving emotional change

207 related to acquiring non-technical competencies relevant to the participants' own practice. Topics

208 included teamwork, communication and ethical dilemmas. Participants reported that through

209 researching their chosen topics, emotions changed from frustration and unease to increased

210 confidence in their behaviours, for example, knowing when to take charge and when to delegate.

211 Acquisition and development of non-technical competencies, relevant to individual practice, are

212 therefore at the heart of the perceived value of the PKS module. Personal emotional benefits

213 included greater enjoyment of work and feelings of being valued. Practice benefits included

214 improved team spirit and team worth. All this and the incorporation of their new learning into their

215 work led to benefits for their clients and animal patients, as identified by the participants.

216 Theme 3 – Stress and Coping through a Reflective Focus

217 Through researching stress for an essay, and through development of non-technical competencies,

218 many practitioners had begun to implement changes in their daily lives and improved their

219 wellbeing. Various negative emotions were replaced by new emotions relating to coping and

220 happiness. Example emotional changes and sub-themes are shown in Table 4.

221 [Insert Table 4 about here]

222 Being a veterinarian was considered a stressful job; the widespread stress in the profession was

223 highlighted through stories of colleagues and friends. One aspect of the job is the inability to

224 maintain ideals:

225 *[Literature demonstrates that] "over time senior vets place value on autonomy and clinical freedom*

226 *compared to the altruism favoured by vet students. Looking at my own experiences, this almost*

227 *inevitable failure to maintain the ideals once held may be partly responsible for … the widespread*

228 *stress in the profession." (556)*

229 Another is the fear of making a mistake, which can consume veterinarians without coping strategies:

230 *"Like most other vets, I am good at agonising over cases but I have to try and learn from any*

231 *mistakes and move on." (564)*

232 Some participants noted that stress should not be an accepted norm. Changing emotions was linked

233 to participants' reflection on 'what they do', leading to more reasonable expectations of themselves:

234 *"Long hours in themselves are not necessarily stressful so long as we feel valued and supported. I feel*

235 *more confident about deciding what I am capable of and comfortable doing, and ensuring I do not*

236 *over-commit to others and fail to take care of myself." (569)*

237 This re-appraisal also included a better understanding of professional roles:

238 *"The constant battle to overcome personal fears which result to stress is a common veterinary*

239 *reality. Lack of knowledge and experience, especially in new graduates is a significant stress factor.*

240 *Gaining knowledge is a critical way of coping with stress. Working for module completion*

241 *enlightened many dark rooms which I was afraid to walk through. The more I reflected, the more*

242 *I was able to identify my stressors, and thus more able to deal with them…[including] accepting*

243 *things that are beyond my power to change and recognizing the importance of a healthy lifestyle."*

244 *(562)*

245 Participants also described changes in 'what they feel' regarding their work, linked to better

246 recognition of positive outcomes:

247 *"I, like most people, have some feelings of inadequacy – however I have noticed improvement since*

248 *beginning my CertAVP. …I was surprised to recognise some of my traits in [the description of*

249 *imposter syndrome, which has]… a very high correlation with stress and anxiety. This has made me*

250 *think more about taking a small amount of pride in my achievements rather than dismissing them."*

251 *(565)*

252 Research for the module demonstrated to participants that they were not alone in feeling stressed

253 and anxious. A better understanding of their part in the profession and their organisation enabled

254 some participants to recognise stressors and change working practices to limit them, and to develop

255 a support network:

256 *"Reading around the subjects of vet's burdens has legitimised my struggles and I feel less alone.*

257 *I have learnt to respect my time off and not feel guilty for needing it… I have developed a group of*

258 *friends who work in emergency and critical care hospitals, we have a mutual understanding that if*

259 *our phones are on at night, we can call on each other to discuss challenging cases. … I feel more a*

260 *member of the profession than ever previously." (576)*

261 Participants noted that through learning about stress and coping, they were able to offer support to

262 colleagues as well as friends outside of the profession, thus suggesting benefits not only for

263 themselves but for others.

264 It should be noted that, unfortunately, for some individuals, it is not always possible for stress to be

265 resolved:

266 *"I find clinical practice stressful and demanding... There is much advice on how to cope with stress in*

267 *the profession, including better job readiness skills, better non-clinical skills and better boundaries to*

268 *prevent situations unravelling to the point where it is too late to resolve. Unfortunately sometimes the*

269 *work is too challenging, the working hours too long, the client and management demands too many*

270 *and the work-life sacrifice too large. This reality is a reason why many friends and colleagues have left*

271 *clinical practice." (591)*

272

273 **Discussion**

274 Engagement with CPD focused on non-technical competencies was identified as both an emotional

275 and a cognitive experience for participants. Veterinarians at all career stages have been shown to

276 prioritise practical technical competence above all other aspects of the professional role (Roder et al

277 2012, 2016) and, as confirmed in the present study, many are initially resentful of and reluctant to

278 engage in reflecting upon the non-technical aspects of practice. This potentially stems from seeing

279 non-technical competencies as 'dumbing down' qualifications and a distraction from key practical

280 elements of CPD (Cross 2009, 2013). However, once directed to explore previously unconsidered

281 topics (Mehta and others 2015), these participants, like others (May and Kinnison 2015), recognised

282 the fundamental importance of non-technical themes, with one report describing the achievement

283 of a fully-integrated professional identity (Nyström 2009) as the participant started to "feel like a vet

284 outside clinical practice".

285 The surprising relevance of non-technical competencies mediated the transition from negative to

286 positive emotions about the learning experience itself. This developing understanding and ability to

287 apply non-technical insights to practice then enabled the transition from negative to positive

288   emotions about the participants' work. One aspect of this was organisational. As a result of their

289   focus on efficient working practices, some participants were able to mitigate the effects of work

290   overload through better prioritisation and more equitable distribution of labour, building on the

291   strengths of the whole veterinary team (Ruby and DeBowes 2007, Kinnison and others 2014). This

292   involves elements of practice management and leadership, competencies typically seen as 'less

293   important' by stakeholders (Cake and others, 2016).

294   The other aspect was more personal, related to reflection and increased self-awareness. An

295   important part of this "autobiographical internal dialogue", that distinguishes it from a traditional

296   academic approach, is the calming of the negative critical voice (Hughes 2009 p.451) and a balancing

297   by a reflective theme of positive, appreciative inquiry (Irby and Hamstra 2016). Participants

298   recognised that clinicians cannot expect to be perfect, and they will make mistakes and need to deal

299   with these. Through reflection, participants described themselves recognising the positive aspects

300   of their casework and giving this greater prominence alongside the negative. This process of

301   "cognitively transforming the situation so as to alter its emotional impact" has been termed

302   cognitive reappraisal (Gross 1998 p284, McRae and others 2012) and positive reframing (Stoeber

303   and Janssen 2011). However, this reappraisal went further, to the heart of their professional role.

304   They started to see the ideals related to their service role, which had caused so much stress, as

305   needing to be balanced by a recognition of what clients could reasonably expect of them, and, linked

306   to this, what they could and should reasonably expect of themselves (Armitage-Chan and others

307   2016, Bartram and others 2012). This enlightenment reduced the dissonance they had been

308   experiencing, leading to greater harmony and reduced stress.

309   This combination of direct application of coping strategies by recognising and rebalancing negative

310   emotions (Stoeber and Janssen 2011) and revision of their fundamental understanding of the

311   clinician's capability appears to be at the heart of the beneficial effects of this programme. A

312 veterinarian's main challenges are not technical, but social, ethical and economic in relation to

313 decision-making.

314 The consequences of failure to have a balanced view of CPD, in support of all aspects of the

315 professional role, include persistent mental health problems. Individuals are stressed when they feel

316 overfaced and ill-prepared for the tasks they undertake (Agius and others 1996, Radcliffe and Lester

317 2003). The first clinical veterinary qualification pays much more attention to non-technical

318 competencies. However, changes to CPD have been much less dramatic (Légaré and others 2015). It

319 is important that professional bodies and employers address this imbalance, and evaluate the

320 benefits of programmes focused on non-technical competencies at the higher levels in Kirkpatrick's

321 hierarchy, namely clinical behavioural change and patient and client benefits (Moore and others

322 2009).

323 This study has a number of limitations, most notably that the reflective summaries are a part of an

324 assessed programme. However, these represent a remarkable resource of extended prose (1040 -

325 1499 words) produced by practitioners, most of whom would have struggled to engage in research

326 as volunteers. Their acceptance as the authentic voice of these veterinarians is supported by the

327 experiences described in nine earlier essays that contributed to the reflective summary, and

328 participant confirmation that their essays represented their continuing views. A further limitation is

329 that this is a convenience sample of veterinarians enrolled in the CertAVP who consented for their

330 work to be analysed. Therefore, the beneficial outcomes need to be viewed as relevant to this

331 group who have a desire to engage in CPD. However, as is clear from the results, many participants

332 did not welcome the requirement to undertake the PKS module and were surprised by its relevance

333 and lasting benefits for their practice and themselves. These narratives are self-reports rather than

334 objective measures of change, although, in part, these are their strength. They represent personal

335 accounts of a learning journey, with reflections linked to individual experiences and integrated in the

336 summaries into an account of changes in attitudes and behaviours. While this research should be

337 followed up with ethnographic studies, qualitative research of this type is a way of exploring

338 individual perspectives and interpretations of their beliefs and behaviours (Bryman 2004, Ritchie and

339 others 2003). Finally, only negative to positive emotional changes were recorded. Examples of

340 negative emotions remaining negative were identified, such as the final quote in the results, but

341 further research could consider if any positive to negative emotional changes existed.

342 In conclusion, veterinarians recognise the importance of CPD in keeping their practical technical

343 skills up-to-date. However, they often do not appreciate (or are reluctant to try) CPD relating to non-

344 technical competencies. The CertAVP's PKS Module can contribute to the realisation of important

345 outcomes for veterinarians, including developing skills such as reflection, recognising your own

346 development as a veterinarian, having reasonable expectations of yourself and coping with stress.

347 These findings support the development of more CPD focused on non-technical competencies, and

348 veterinarians working in all roles, and with all species and specialities, should be encouraged to

349 attend a mixture of CPD, including non-technical opportunities. Future research is required on how

350 best to align the current needs of the profession with CPD provision to ensure the professional

351 capability of veterinarians matches societal expectations and supports the wellbeing of members of

352 the profession.

353

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510   Table 1   Royal College of Veterinary Surgeons (RCVS)' Professional Key Skills (PKS) Module

PKS Module Learning Outcome Content
Communication skills—involving clients, colleagues and other professionals, through dialogue and discussion as well as presentations
Personal development—including time and task management, personal and professional support networks and personal decision making
Welfare and ethics—including the RCVS Guide to Professional Conduct and its application, the role of veterinary practice in the broader context of society, animal welfare issues and interprofessional relationships
Business and personnel management—involving practice teamwork and delegation, human resource skills, financial and business planning, training of personnel, and practice promotion and marketing
Data handling—including effective use of IT, management of clinical and financial records, and evaluation, collection, critical analysis and use of relevant research/data
Legislation—including application of health and safety principles and legislation in veterinary practice, as well as other legislation affecting veterinarians

511

512

513   Table 2   Participant Demographics

Alma Mater	Frequency	Year of Joining RCVS	Frequency	Gender	Frequency
Bristol	4	1990-1995	5	Female	33
Cambridge	4	1996-2000	5	Male	13
Dublin	1	2001-2005	11		
Edinburgh	7	2006-2010	22		
Glasgow	6	2011-2015	2		
Liverpool	4	Unknown	1		
RVC	13				
Non-UK	6				
Unknown	1				

514

515 Table 3 Negative to Positive Emotional Change relating to the Professional Key Skills Module itself
516 (Theme 1)
517

Example Emotions	Sub-Theme	Sub-theme examples	Codes
Reluctance Trepidation Daunted Scepticism Uncomfortable ↓	Initial reluctance to overcome the obstacle of the PKS Module prior to clinical modules	Observed colleagues struggle with the PKS module	
		Unsure what to expect, contrast to university	
		Perceived irrelevance of topics	Lack of value of topics to daily work
			Lack of awareness of topics
			Assumed confidence in topics
			Previously ignored, boring, topics
		Writing essays	
	Challenging nature of the PKS module	Uncomfortable reflection	Revisiting mistakes
			Recognising lack of knowledge
			Stressful and frustrating
			Steep learning curve to reflect effectively
		Time and money	
Reflection leading to recognition of relevance of module to daily casework			
Surprise Enjoyment Fascination Hope Stimulation	Surprisingly relevant themes of the PKS module	Importance of non-clinical topics	Opportunity to spend time on topics would not have otherwise considered
			Research evidence base for professionalism topics
			Thought provoking and stimulating
		Reflection on me	Learned how to reflect rather than be self-critical over past events
			Should be a part of life to drive forwards career
		Developed skills, knowledge and confidence	Literature searching
			Writing skills
			Structuring and presenting thoughts
			Time management
		Self-directed learning experience	
		Formal study and feedback	
	Outcomes - Benefits	Me	Better vet
			Enjoy job and learning
			Motivation for future study and work
		Practice and profession	Change of approach to work
		Clients and patients	

518

519 Table 4 Negative to Positive Emotional Change Related to a Reflective Focus on Professional Key
520 Skills (Theme 3)

Example Emotions	Sub-Theme	Sub-theme examples	Codes
Stress Guilt Anxiety Struggle Fatigue	Veterinarians face stress in themselves and others	My own stress	
		Colleagues' stress	
		Friends/family's stress	
	Veterinary practices foster multiple stressors	Being a veterinarian is a stressful job	Workload and work life balance
			Poor management
			c.f. Don't just accept this
		Failure to maintain ideals	
		Feelings of inadequacy	
		Work tensions/constraints	
		Ethical dilemmas	
		Complaints and mistakes	
Reflection leading to Coping Mechanisms and Development of General Professional Skills			
Coping Enlightenment Enjoyment Harmony Happy	Cognitive reframing	View of Self – What I Do	Reasonable expectations of self
			Increased knowledge of professional role
		View of Self – What I Feel	Acceptance: It's not just me
			Recognise Imposter Syndrome
			Develop a positive attitude
		View of Organisation	Recognise work stressors and my resulting stress
			Change working practices
			Utilise support network
		c.f. Some veterinarians cannot cope	
	Far reaching outcomes - Benefits	Me	Reducing stress – enjoy job
		Clients and patients	Improved outcomes, including better communication
		Colleagues (including students)	Reduce stress in colleagues
		Friends/family	Reduce stress in friends/family

521