

This is the Accepted Manuscript of the following article:

May, SA and Kinnison, T (2015) Continuing professional development: learning that leads to change in individual and collective clinical practice. VETERINARY RECORD, 177 (1).

which has been published in final form at <http://dx.doi.org/10.1136/vr.103109>.

The full details of the published version of the article are as follows:

TITLE: Continuing professional development: learning that leads to change in individual and collective clinical practice

AUTHORS: May, SA and Kinnison, T

JOURNAL TITLE: Veterinary Record

VOLUME/EDITION: 177/1

PUBLISHER: BMJ Publishing Group

PUBLICATION DATE: 6 May 2015 (online)

DOI: 10.1136/vr.103109

## **Continuing Professional Development: Learning that Leads to Change in Individual and Collective Clinical Practice**

Stephen A May and Tierney Kinnison

Royal Veterinary College, Hawkshead Lane, North Mymms, Hatfield, Hertfordshire AL9 7TA

### **Abstract**

The lack of effectiveness of traditional models of continuing professional development is increasingly recognised. While they can lead to increased knowledge of participants, research suggests that there is a general failure to produce meaningful and sustained changes in clinician behaviours. The aim of this study was to explore the effect of the Royal College of Veterinary Surgeons' (RCVS) new individual outcomes-focused approach to delivery of continuing professional development (CPD) through the reflective accounts of participant experiences.

Content analysis of twelve summaries of their learning, produced by early pioneers of the Professional Key Skills (PKS) Module of the RCVS Certificate in Advanced Veterinary Practice, revealed that the benefits of the PKS-related professional development is best understood through a framework of stakeholder dynamics, with impact and behavioural change at the individual participant level having an effect on practice team behaviours, leading to patient, owner and business benefits.

It can be concluded that, at least for these early pioneers, this new model for CPD has resulted in changes that have gone beyond knowledge accumulation to changed practitioner behaviours and recognisable patient, owner and business benefits.

### **Introduction**

Rapid advances in knowledge and technology, and societal changes that mean a career for life is an increasing rarity, have led to greater emphasis on lifelong learning to maintain individual competence and employability (Bassot 2009). In the case of those involved in professional practice, the responsibility for ensuring engagement in lifelong learning goes beyond the level of

the individual to that of the statutory body. The “social contract” that underpins all professions depends on public trust that members of the profession will have received appropriate initial training, and maintained their complex knowledge and skills current in relation to best practice and standards (Hilton and Slotnick 2005, May 2013).

Historically, much continuing professional development (CPD) has been delivered in a traditional lecture format. This has supported additional learning, based on the input-based measures set by many professional bodies (IAESB 2008). However, research on traditional CPD suggests that its consequent effect on professional practice is disappointing (Davis and others 1999, Forsetlund and others 2009). While some factual knowledge may be gained, there is little evidence that this results in changes in behaviour leading to benefits to clients or professional businesses. One problem would appear to be that much CPD is based on old pedagogies of information transmission and “just-in-case” learning (Williams 2007). More effective CPD programmes are aligned with an individual’s work requirements and provide timely and relevant professional development (Davis and others 1999, Forsetlund and others 2009).

The concurrent recognition of the need for maintenance and improvement of professional skills and the limitations of traditional CPD has led to exhortations for a move to completely new models for continuous learning that are competency-based, focused on patient needs and embedded in the workplace (Miller and others 2010, Légaré and others 2014). Conceptual frameworks have been developed which link desired outcomes, at the levels of physician behaviour and patient benefits, to appropriate formative and summative assessment, supported by presentations and discussions using practice-relevant educational materials (Moore and others 2009). However, in the latest design of its professional Certificate in Advanced Veterinary Practice (CertAVP), the Royal College of Veterinary Surgeons (RCVS), UK, has gone a stage further in setting general practitioners the task of identifying personal areas for improvement, within a framework defining broad areas of practice, and with the aid of their tutors identifying learning opportunities (literature, and in some cases taught courses) to support their professional development (Millington 2010). One version of the original Professional Key Skills (PKS) module (which sits alongside basic and advanced clinical modules) has been built around a series of reflective essays on which participants receive feedback “for” their learning (Maddison 2012).

The aim of this study, the first of its type, was to explore the effects of engagement in the CertAVP on clinicians and their practice, through the writings of the early pioneers, to discover whether or not the model lived up to the aspirations of its designers.

## **Methods**

### **The Professional Key Skills Module and Reflective Summaries**

The most radical change for the CertAVP, from the individual discipline-based Certificates that it replaced, was the inclusion of a compulsory module dedicated to professional and business-related skills (see Table 1 for content outline). The original PKS Module involved serial submission of ten reflective essays, each receiving formative feedback, allowing iterative skills development around sourcing relevant literature, reflective writing itself and making judgements based on qualitative evidence. The module was based on open question sets covering broad areas within which practitioners could make meaning of their responsibilities and experience in the prescribed context (see Table 2 for examples). The RCVS instruction was that such essays should be rooted in personal experience, on which candidates reflected critically, in the light of relevant theory, in order to understand where things had gone well and not so well and how to improve in future. Candidates who formed the subjects of this study had to produce their own responses to nine essay titles, followed by a final reflective piece entitled: "Summarise your experience of learning across the whole module and provide evidence of how your approach to your own professional work may have changed and improved as a result of engaging in further development".

### **Reflective Summaries for Research**

While reading PKS summaries, assessors increasingly realised that these were a unique resource in terms of the richness of material that related to clinical, ethical, economic and personal issues in professional practice, and the profound effect this learning was having on participants and their practice teams. Therefore, RVC Ethics Committee approval was gained for research use of material originally submitted for assessment purposes, conditional on obtaining informed consent by email from the authors. This also allowed the opportunity to obtain confirmation that views expressed remained those of the authors.

Twelve reflective summaries were purposively selected for conventional/directed content analysis (Hsieh and Shannon 2005), based on order of submission and promptness of return of consent. The next three summaries for which consent was received were subsequently analysed to assure data saturation (Pope and others 2000, Guest 2006) in the original set of 12. These confirmed that there were no further themes to be recognised. The practitioners who authored these summaries had been qualified on average for seven years (range 2-17) and 10 (83%) were female, reflecting the current intake to veterinary courses in the UK (RCVS 2010). The average time to completion of the module was 12.5 months (range 2-35).

Content analysis was in two stages. Emergent themes were manually coded independently by the two authors. At an initial meeting, content-related codes were identified that mapped directly to the themes of the module, together with a number of overarching attitudinal, behavioural and outcomes-related codes that suggested a fruitful learner-oriented framework for exploration and analysis. In further discussion, one of the coders (SM) recognised many similarities to Kirkpatrick's (1998) hierarchy for evaluation of educational programmes, so a matrix was developed to direct revised, independent coding of content against learning. Once completed, these separate matrices were compared, and further discussion resolved the areas of difference. While behavioural intentions were taken as evidence of learning (Kirkpatrick Level 2), summaries had to contain reflections and actual incidents of changed behaviour (Kirkpatrick Level 3) and practice/client/animal benefits (Kirkpatrick Level 4) for these sections to be coded as such.

## Results

The impact and benefit of the PKS-related professional development can be understood through a framework of stakeholder dynamics, with impact and behavioural change at the individual participant level having an effect on practice team behaviours, leading to patient and owner benefits (Figure 1). The participants saw the module as emotionally challenging both in terms of its content and the assessment process, as professional skills were "insufficiently taught at veterinary school" (participant 3, paragraph 1) or even "overlooked in university curricula" (12:1), and reflective essay writing was a very unfamiliar experience. For some participants, this meant that the module was initially resented, until their engagement led to the often surprised recognition that they lacked knowledge and skills that were highly relevant to their day-to-day practice:

*"I enrolled... on returning to work after the birth of my second child... I admit to feeling slightly less enthusiastic when I discovered that the first module focused on non-clinical professional competencies ... I struggled to see how researching and writing on (these) topics... could improve my clinical practice which was, after all, the aim of the exercise.*

*I am happy to admit that I was completely wrong. Going 'back to basics' and reminding myself of what it means to be a professional ... has been invaluable."* (10:1-2)

### **The Individual: Behavioural Change**

The dominant theme for reflection in relation to personal practice was consulting room communication, which is a large part of the general practitioner's day. Participants adopted various models for structuring consultations and quickly recognised their value as they reflected on their deployment with clients. They found themselves more confident, particularly in

challenging encounters, such as those involving complaints resulting from disappointment over treatment efficacy, and recognised superior outcomes in contrast to similar previous cases. Clients also appear to have recognised this change:

*"...now when I hear the client talking to the receptionist in the waiting room after the consultation they seem to be recalling what I said more accurately, and talking about the consultation more positively."*

( 10:7)

The other major reflective theme at individual level related to the learning process and personal development. Participants progressively learned to organise their time better, including regular periods in their week dedicated to the CertAVP:

*"My study plan took the form of a learning journal... I identified the barriers that restricted my study time: including long work hours, on call commitments, needing to spend time with my young son and husband, household commitments and the need to sleep. I identified that my study was more productive at the practice, before and after work, where there are less distractions."*

( 7:2)

Participants became more skilled at analysing their strengths and weaknesses, and started to be more proactive in sourcing literature and identifying CPD opportunities to address "gaps":

*"I have learnt how to search for technical papers and research online. This will continue to be useful to me, particularly to practice evidence-based veterinary medicine and searching for information as questions arise during clinical work."*

( 4:9)

*"...as well as developing my professional skills I have also been identifying my personal strengths and weaknesses.... For example, I realise my ultrasonography skills are not satisfactory ... In response... I enrolled in some CPD and asked a senior clinician to allow me to perform all her scans, where appropriate, before her to give me more practice."*

( 3:13)

Participants recognised the value of the reflective process to all aspects of their work:

*"This module has forced me to think in a reflective manner.... I now find myself increasingly asking questions such as "Could I have done this differently? Was this the outcome I was*

*expecting? ... I have started keeping a CPD diary, not just to record what I have done but other information such as whether my learning objectives were met, and how my practice of veterinary medicine may change as a result of what I have learned."*

(10:12)

They also (re-)engaged with the RCVS Guide to (now "Code of") Professional Conduct (RCVS 2014), recognising its relevance and determining that it should be a more prominent part of their professional reasoning:

*"Most importantly, my essays regularly refer to the RCVS Guide to Professional Conduct... I now have a clear indication of my responsibilities, which I can recall with ease... In fact, whilst recently interviewing a prospective new veterinary surgeon, I asked when they had last perused the guide. The answer was rather worrisome, but I suspect she is not alone."*

( 5:7)

In addition, a greater focus on the meaning of professionalism, including not knowing everything (or being able to succeed in every case) and work-life balance, led to a reduction in the stress that many had been experiencing in their professional lives:

*"Undertaking this module has certainly made me consider my decision making skills in particular and I have noticed myself having more discussions with colleagues regarding the ethical issues surrounding cases and feel more confident in voicing my opinions, I also now know that there is often not a right or wrong answer in many cases and suffer less with stress of worrying that I had made incorrect decisions. I now feel much more aware of my own personal strengths and weaknesses...."*

(2:5)

*"I quickly realised that it needed to change when I realised the link between tiredness, high stress levels and reduced patient care... I would not have achieved this without taking time to consider my own work-life balance, as it was only by taking a step back and considering it in an essay form that I realised it needed to change."*

(11:8)

### **The Practice: Impact and Benefit**

Emergent themes at the level of the practice can be understood as either people or systems-related. Although individuals tended to focus on different areas for broader practice development, half of them explored various aspects of leadership and team-working, including the effects of individual aspirations and capability on standards, motivation and performance,

and, to the ultimate benefit of the practice team, business performance and client satisfaction. There were examples of improved understanding producing positive benefits at individual level within the team:

*“Understanding team roles has helped to improve inter-team relationships. For example, I was struggling at times to have a good relationship with the Head Vet at my practice. Since researching and writing the essay on teamwork... Our relationship has improved.”*

(8:7)

There were also examples of changed practice on the part of the participant spreading to others:

*“Before this course I was happy with my communication skills and consulting techniques. After critically analysing my techniques I feel I have improved but realise that there is still much to learn. I have talked to the practice manager and we feel that it would be beneficial to book myself and the practice manager on a communication skills seminar. We can then share our knowledge with the rest of the veterinary team striving to improve a better service for clients.”*

(1:16)

Participants in both senior and junior roles also engaged the practice team in improvements in clinical services and in some instances already had evidence of benefits to the business:

*“.....after a recent series of Angiostrongylus vasorum cases, I produced a notice-board educating owners about the parasite and the action required. I also involved the nurses promoting team spirit. A year ago I may not have come up with such an idea or lead in such a confident manner. Our sales of worming products doubled!”*

(3:10)

Participants started to recognise the importance of motivation and job satisfaction for both themselves and others, and took steps through the appraisal system and positive team behaviour to influence these.

*“While salaries, rota and job roles are outwith my areas of responsibility, I can motivate through teaching, praise and a pleasant, helpful attitude in an effort to retain staff and create a good working team and environment. I am currently more proactive in encouraging qualified nurses to utilise their skills... The practice I am sure has also benefited: the team is working better together, there are fewer misunderstandings and I believe we have greater client retention.”*

(8:6,9)



## **The Patient / Owner: Impact and Benefit**

It was clear that the participants gained considerable satisfaction from recognising the benefits of changed individual and practice team behaviours on animals and their owners. Veterinarians have to balance an animal's best interests with an owner's wishes, and this can sometimes be challenging. However, more in-depth understanding of welfare and ethics, combined with better communication skills, was recognised as important to upholding the promise all veterinarians make, "to ensure the health and welfare of animals" committed to their care, on graduation (Kirkpatrick 1998):

*"Animal welfare is a priority in all cases and since studying this I have gained confidence in my ability to recognise if an animal is suffering.... Improved communication skills have also made it easier for me to discuss welfare implications with clients, and I find myself having this discussion more often."*

(2:7)

The reflective process also highlighted the danger of automaticity, and the need to provide the best available treatments for animals.

*"I had started to question the rationale behind some of the clinical decisions I was making. I was slightly concerned about getting stuck in a professional rut...(this) led me to challenge my existing thinking, and to arrange a clinical vets meeting at my practice to discuss the potential implications for future management... and how our current protocols may need to be changed."*

(10:8)

However, it was recognised knowledge alone was not sufficient, and there was always room for improvement in explanations to clients:

*"I have found that clients are very happy to adopt a "reflective-contract" and want to know the evidence behind treatment options. Increased client satisfaction and better patient outcomes have given me a greater sense of job satisfaction."*

(8:9)

Once more, such explanations, and improved communication more generally, were appreciated by clients and led to more requests to see individual clinicians and business for the practice.

*"Engaging in communication skills training... has made a significant improvement to my consulting skills... I take time to listen to the client... and I have noticed a big increase in the*

*number of open questions I ask during consultations. In recent months there has been a noticeable increase in the number of clients requesting to see me, which I am sure is a direct result of this improved communication”.*

(2:2)

## **Discussion**

Professional bodies have recognised that mere attendance of CPD events and recording of inputs are no guarantee of learning or improvements in professional practice (IAESB 2008, Davis and others 1999). This has led to an exploration of frameworks for CPD more focused on outcomes (Moore and others 2009, Van Hoof and Meehan 2011), such as behavioural changes, that lead to client benefits. However, it is important that new methods, like the old, are evaluated to ensure that they are achieving their desired goals (Olson and Tooman 2012, Schostak and others 2010). This study has confirmed that Kirkpatrick’s (1998) framework provides a useful tool for evaluating the effectiveness of any learning experience beyond basic levels of enjoyment (Olson and Tooman 2012, Leung and others 2010). One CertAVP participant chose to use this framework explicitly to structure their summary, but it was clear, as common themes emerged from this summary set, that all participants attached importance and value to changes in their practice that had led to benefits to the practice team, their patients and their owners.

A number of participants wrote about their initial concerns about the PKS Module, both in terms of the relevance of its content and its approach to learning. This was, in part, due to discussion in the veterinary press about “dumbing down” caused by the inclusion of soft skills and a suspicion of reflective writing as a meaningful developmental process that could also contribute to assessment (Cross 2009, Cross 2013). In such situations, it is important that the relevance of the learning programme is emphasised (Maddison 2012). Success or failure of programmes depends on capturing interest followed by intrinsic motivation to explore further and benefit from ensuing learning (Krapp 2002). Their reaction caused some participants to delay starting or break their studies after an initial foray into the literature, leading to the long tail in completion times. CertAVP information days (Maddison 2010), and extra online learning support, followed up by process (as well as content)-focused feedback (Bain and others 2002), were all important in dispelling these misapprehensions and eliminating any negative emotions associated with the distance learning format (Angelaki and Mavroidis 2013).

One of the challenges for those involved in professional development in clinical disciplines has been the inability for many to reconcile positivist perspectives on scientific knowledge with constructivist frameworks for integrating scientific and professional knowledge to achieve steady improvements in clinical practice (Wilson 2000). Barad (2007) has described the

practices of knowing as “specific rational engagements that participate in reconfiguring the world“. Although misinterpretation of the concept of evidence-based medicine has led some to think of all important new evidence as coming from elsewhere (Mylopoulos and Scardamalia 2008), it is important that professional development acts as a vehicle for self-realisation and the incorporation of new knowledge derived both locally and externally. Having identified gaps in their knowledge and skills, some were able to negotiate, with work colleagues, previously unrecognised opportunities for supervised learning. Such practitioner interactivity is now recognised as an important part of CPD, the absence of which could account for a poor response to improvement initiatives (Parboosingh and others 2011). However, to remain up-to-date, practice must be informed both by learning from experience and the evidence of best practice from elsewhere. This allows “validity checking” and can be achieved through self-directed reading, online supported discussions/learning and various forms of traditional, face-to-face CPD (Olson and Tooman 2012). Participants described using all three of these routes.

To source relevant material, participants grappled with “the work-learning-life balance” challenge, and found new ways of integrating periods for reflection and finding answers into their busy schedules. Traditional CPD has often been very separate from an individual’s practice, with a period away followed by full immersion back in work with no structure to integrate the two (Price and others 2010). The evidence reported here indicates that individuals have not only enhanced their information sourcing skills but have also successfully combined work and professional development in ways that supported deeper learning - learning journals/diaries (McCrinkle and Christensen 1995) - and are potentially sustainable.

Despite some opportunity, even in this PKS module, to focus on clinical areas, it is interesting that participants chose to focus on communication skills, team-working and interpersonal relations. It is clear that they recognised profound changes that benefitted them, their practices and clients, and this would appear to have caught their attention rather than the incremental changes they may have seen in more clinically-oriented areas. It is known that many examples of poor patient/client service relate to failures in these areas rather than lack of technical knowledge (Reason 2000, Leonard 2004, Latham and Morris 2007) so this is very relevant to the quality of professional practice.

In addition to the clinical practice and business related benefits, one other finding deserving of mention is the reduced stress reported by several individuals. This resulted from their better understanding of what constitutes reasonable expectations of their performance (Knight and Mattick 2006). Stress is a problem for veterinarians, with suicide rates as a profession four times the population average and twice those seen in other health professions (Bartram and others 2010). Like many involved in other professions, veterinarians are elite performers and prone to perfectionism (Zenner and others 2005, Peters and King 2012). This, together with

their training, can easily lead to them believing that they should be able to cure every animal presented to them, and they feel personally responsible for any failure to succeed (Hewitt and Flett 1991). The PKS module with its broader perspective on the nature of the professional person allowed them to understand that they cannot have answers for every case, and that they must at times consider their own interests alongside those of others (Thistlethwaite and Spencer 2008, May 2013).

Although the goals of CPD (Friedman and Phillips 2004, IAESB 2008, RCVS 2014) and the principles which underpin successful adult learning are increasingly well-understood (Grow 1991, Hase and Kenyon 2000), challenges remain as to how these are best achieved in practice. A switch from measurement of inputs, as the criterion of engagement, to outcomes, as evidence of professional development, is seen as giving autonomy back to professionals to adopt their own approaches to learning, and helping individuals to recognise the impact of that learning on their practice (IAESB 2008). The CertAVP achieves this by encouraging individuals to explore areas of their practice in need of improvement, together with the identification of changes to be made, and recognising, in its assessment, both the processes involved and the outputs stimulated by this engagement in professional development. Although not originally modelled on it, iterative formative feedback, leading to the integrative summary of learning across the module, has much in common with the “patchwork text” approach to assessment for learning that has been described for the professional development of teachers (Winter 2003, Dalrymple and Smith 2008). This incorporation of appropriate mechanisms for feedback, and support of the recognition by participants of the value of formal and informal feedback from all directions, seems to be crucial to the enhancement of intrinsic motivation, aiding engagement and self-direction.

Initial experience with this CPD programme indicates that, at last for a small group of early pioneers, it fulfils many of the aims of those originally involved in its design. However, although only clear examples of changed practice were taken as evidence of achievement of the higher Kirkpatrick levels of impact, the conclusions are still based on self-reporting. It will be useful to conduct follow-up studies that provide triangulation with the evidence in these reflective summaries, through researching the perspectives of other members of the practice team on CertAVP programme participants.

## **Acknowledgement**

We are grateful to all those busy practitioners who gave consent for their reflective accounts of their “PKS journeys” to be used as the basis of this study.

**Table 1**

**Content Outline for RCVS Professional Key Skills Module**

- 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 inter-professional 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

Table 2

**Example Reflective Essays taken from the Original Question Set of 10**

1. Using evidence from two cases, one in which your communication skills were exemplary and one in which you felt your communication skills were lacking, identify and discuss the key features which lead to a successfully managed customer.
5. Discuss your most puzzling case and how such cases affect your diagnostic approach and your general approach to practice.
6. Outline the important stages in the process of staff appraisal. Discuss an appraisal which you felt went less well than you would have liked, and how it could have been improved.
10. Ethical concerns are a key feature of professional life. Outline one ethical dilemma relating to the business aspect of your work and one relating to your practice of veterinary science. How did you resolve each to your own satisfaction?

## References

- ANGELAKI, C. & MAVROIDIS, I. (2013) Communication and social presence: The impact on adult learners' emotions in distance learning. *European Journal of Open, Distance and E-learning* **16**, 78–93.
- BAIN, J.D., MILLS, C., BALLANTYNE, R. & PACKER, J. (2002) Developing reflection on practice through journal writing: Impacts of variations in the focus and level of feedback. *Teachers and Teaching: Theory and Practice*, **8**, 171–196.
- BARAD, K. (2007) *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning*. Duke University Press, Durham, NC.
- BARTRAM, D.J., SINCLAIR, J.M.A. & BALDWIN, D.S. (2010) Interventions with potential to improve the mental health and wellbeing of UK veterinary surgeons. *Veterinary Record* **166**, 518–23.
- BASSOT, B. (2009) Career learning and development: a bridge to the future. In: *Constructing the Future: Career Guidance for Changing Contexts*. Ed. H. Reid. Institute of Career Guidance, Stourbridge. p.1.
- CROSS, G. (2009) What qualifications are needed to handle referrals? *Veterinary Practice*, February 2009, p.6.
- CROSS, G.(2013) Surveying the certificate landscape. *Veterinary Practice*, June 2013, p.6.
- DALRYMPLE, R., & SMITH, P. (2008) The Patchwork Text: enabling discursive writing and reflective practice on a foundation module in work-based learning. *Innovations in Education and Teaching International*, **45**, 47–54.
- DAVIS, D., O'BRIEN, M. A. T., FREEMANTLE, N., WOLF, F. M., MAZMANIAN, P., & TAYLOR-VAISEY, A. (1999) Impact of Formal Continuing Medical Education: Do conferences, rounds, and other traditional continuing education activities change physician behavior or health care outcomes? *Journal of the American Medical Association*, **282**, 867–874
- FORSETLUND, L., BJORNDAL, A., RASHIDIAN, A., JAMTVEDT, G., O'BRIEN, M.A., WOLF, F., DAVIS, D., ODGAARD-JENSEN & OXMAN, A.D. (2009) Continuing education meetings and workshops: effects on professional practice and health care outcomes (review). *Cochrane Collaboration Review*, Wiley & Sons.
- FRIEDMAN, A., & PHILLIPS, M. (2004). Continuing professional development: developing a vision. *Journal of Education and Work*, **17**, 361–376.
- GROW, G. O. (1991). Teaching learners to be self-directed. *Adult Education Quarterly*, **41**, 125–149.
- GUEST, G. (2006). How many interviews are enough?: An experiment with data saturation and variability. *Field Methods*, **18**, 59–82.
- HASE, S. & KENYON, C. (2000) From Andragogy to Heutagogy. *Ultibase Articles*, (December). Retrieved from <http://ultibase.rmit.edu.au/Articles/dec00/hase1.pdf>

- HEWITT, P. L. & FLETT, G. L. (1991) Perfectionism in the self and social contexts: conceptualization, assessment, and association with psychopathology. *Journal of Personality and Social Psychology*, **60**, 456–70.
- HILTON, S. R. & SLOTNICK, H. B. (2005) Proto-professionalism: how professionalisation occurs across the continuum of medical education. *Medical Education*, **39**, 58–65.
- HSIEH, H.-F. & SHANNON, S. E. (2005) Three approaches to qualitative content analysis. *Qualitative Health Research*, **15**, 1277–88.
- IAESB (2008) Approaches to Continuing Professional Development (CPD) Measurement. International Accounting Education Standards Board Information Paper. <http://www.ifac.org/sites/default/files/publications/files/approaches-to-continuing-pr.pdf>. Accessed 19 December 2014.
- KIRKPATRICK, D. L. (1998) The Four Levels: An Overview. In: *Evaluating Training Programs 2<sup>nd</sup> edition*. Berrett-Koehler, San Francisco. pp. 19-24.
- KNIGHT, L. V. & MATTICK, K. (2006) “When I first came here, I thought medicine was black and white”: making sense of medical students’ ways of knowing. *Social Science and Medicine*, **63**, 1084–96.
- KRAPP, A. (2002) Structural and dynamic aspects of interest development: theoretical considerations from an ontogenetic perspective. *Learning and Instruction*, **12**, 383–409.
- LATHAM, C. E. & MORRIS, A. (2007) Effects of formal training in communication skills on the ability of veterinary students to communicate with clients. *Veterinary Record*, **160**, 181–186.
- LEGARE, F., FREITAS, A., THOMPSON-LEDUC, P., BORDUAS, F., LUCONI, F., BOUCHER, A., JACQUES, A. (2014) The majority of accredited continuing professional development activities do not target clinical behavior change. *Academic Medicine*, **XX(Xx)**, 1–6.
- LEONARD, M. (2004) The human factor: the critical importance of effective teamwork and communication in providing safe care. *Quality and Safety in Health Care*, **13**(Suppl\_1), i85–i90.
- LEUNG, K. H., PLUYE, P., GRAD, R. & WESTON, C. (2010) A reflective learning framework to evaluate CME effects on practice reflection. *The Journal of Continuing Education in the Health Professions*, **30**, 78–88.
- MADDISON, J. (2010) Inspiring certainty on CertAVP. *Veterinary Times*, 2 August 2010, p.6.
- MADDISON, J. (2012) CertAVP ‘more rigorous’ than its predecessors. *Veterinary Times*, 16 July 2012, p.23.
- MAY, S. A. (2013) Veterinary Ethics, Professionalism and Society. In: *Veterinary and Animal Ethics*. Eds. C.M. Wathes, S. A. Corr, S. A. May, S. P. McCulloch, & M. C. Whiting. Wiley-Blackwell, Oxford. pp. 44–58.
- McCRINDLE, A. R. & CHRISTENSEN, C. A. (1995) The impact of learning journals on metacognitive and cognitive processes and learning performance. *Learning and Instruction*, **5**, 167–185.

- MILLER, B. M., MOORE, D. E., STEAD, W. W. & BALSER, J. R. (2010) Beyond Flexner: a new model for continuous learning in the health professions. *Academic Medicine*, **85**, 266–72.
- MILLINGTON, C. (2010) Building a certificate block by block. *Veterinary Record*, **166**(6), i-ii.
- MOORE, D. E., GREEN, J. S. & GALLIS, H. A. (2009) Achieving desired results and improved outcomes: Integrating planning and assessment throughout learning activities. *Journal of Continuing Education in the Health Professions*, **29**, 1–15.
- MYLOPOULOS, M. & SCARDAMALIA, M. (2008) Doctors' perspectives on their innovations in daily practice: implications for knowledge building in health care. *Medical Education*, **42**, 975–81.
- OLSON, C. A. & TOOMAN, T. R. (2012) Didactic CME and practice change: don't throw that baby out quite yet. *Advances in Health Sciences Education: Theory and Practice*, **17**, 441–51.
- PARBOOSINGH, I. J., REED, V. A., CALDWELL PALMER, J. & BERNSTEIN, H. H. (2011) Enhancing practice improvement by facilitating practitioner interactivity: new roles for providers of continuing medical education. *Journal of Continuing Education in the Health Professions*, **31**, 122–7.
- PETERS, M., & KING, J. (2012). Perfectionism in doctors. *British Medical Journal*, **344**, e1674.
- POPE, C., ZIEBLAND, S. & MAYS, N. (2000) Analysing qualitative data. *British Medical Journal*, **320**, 114–116.
- PRICE, D. W., MILLER, E. K., RAHM, A. K., BRACE, N. E. & LARSON, R. S. (2010) Assessment of barriers to changing practice as CME outcomes. *Journal of Continuing Education in the Health Professions*, **30**, 237–45.
- RCVS (2010) The Annual Report of the Royal College of Veterinary Surgeons: Part 2. RCVS, London.
- RCVS (2014) Code of Professional Conduct for Veterinary Surgeons. RCVS, London.
- REASON, J. (2000). Human error: models and management. *British Medical Journal*, **320**, 768–770.
- SCHOSTAK, J., DAVIS, M., HANSON, J., SCHOSTAK, J., BROWN, T., DRISCOLL, P., JENKINS, N. (2010) "Effectiveness of Continuing Professional Development" project: a summary of findings. *Medical Teacher*, **32**, 586–92.
- THISTLETHWAITE, J. & SPENCER, J. (2008) *Professionalism in Medicine*. Radcliffe Publishing, Abingdon.
- VAN HOOFF, T. J. & MEEHAN, T. P. (2011) Integrating essential components of quality improvement into a new paradigm for continuing education. *Journal of Continuing Education in the Health Professions*, **31**, 207–14.
- WILLIAMS, P. J. (2007). Valid knowledge: the economy and the academy. *Higher Education*, **54**, 511–523.



WILSON, H.J. (2000) The myth of objectivity: is medicine moving towards a social constructivist medical paradigm? *Family Practice*, **17**, 203-209.

WINTER, R. (2003) Contextualizing the Patchwork Text: Addressing Problems of Coursework Assessment in Higher Education. *Innovations in Education and Teaching International*, **40**, 112–122.

ZENNER, D., BURNS, G. A., RUBY, K. L., DEBOWES, R. M. & STOLL, S. (2005) Veterinary students as elite performers: preliminary insights. *Journal of Veterinary Medical Education*, **32**, 242–8.

Figure 1

Individual learning led to changed approaches to knowledge acquisition and use, and clinical practice. This led to direct benefits to the patient/owner and the whole practice team, with evidence of further benefits to patient/owner via this indirect, practice team, route.

## Framework of “Stakeholder Dynamics” Behavioural Change, Impact and Benefit

