# Desarrollo de profesores en educación veterinaria

# Developing teachers in veterinary education

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## Resumen

Hoy en día hay una mayor concienciación de que los profesores de formación profesional y educación superior deben ser capacitados en la enseñanza, aprendizaje y evaluación para apoyar el aprendizaje más eficaz de los estudiantes. Sin embargo, existen retos en la formación de estos profesores, que son especialistas disciplinares con grandes cargas de trabajo y no disponen de tiempo para estudiar. Como la "educación" es una disciplina con su propia epistemología, la participación de estos profesores implica demostrar esta diferencia desde el principio, y proporcionar oportunidades para que puedan integrar su propia práctica, específica de su disciplina, para personalizar la formación. En este

## Abstract

There is increased recognition that teachers in further and higher education should be trained in teaching, learning and assessment to support more effective student learning. However, there are challenges in training these teachers, who are disciplinary specialists with heavy workloads and no time to study. As "education" is a discipline with its own epistemology, engaging these teachers involves demonstrating this difference at the outset and providing opportunities for them to integrate their own discipline-specific practice to personalize the training. We describe a postgraduate certificate course that was designed as discipline-specific training for teachers in

artículo se describe un curso de certificado de postgrado que fue diseñado para la formación específica para los profesores en los sectores veterinario y paraveterinario. Los participantes se sometieron a un ciclo de aprendizaje experiencial al convertirse en "estudiantes", y tuvieron experiencias de primera mano sobre la comprensión de cómo sus propios estudiantes aprenden, la mejor manera de utilizar diferentes métodos de enseñanza y cómo las evaluaciones pueden impulsar el aprendizaje. La filosofía central del curso fue el desarrollo de un profesional reflexivo, y esto se logró mediante un modelo de tutor-tutorando con retroalimentación formativa. El curso fue impartido en el modo cara a cara (F2F) y de educación a distancia (DL) para ampliar el acceso y la flexibilidad. A través de la integración de los modos de F2F y DL, todos los participantes experimentaron el uso de la tecnología en el diseño educativo y la enseñanza. La demografía de los 152 participantes en el programa, que ha estado funcionando desde 2010, muestra que la mayoría son veterinarios que trabajan en instituciones de educación superior y son académicos principiantes o a mitad de carrera. Además, el 25% de los participantes son de fuera del Reino Unido, lo que muestra la necesidad de un curso específico de la disciplina que se pueda estudiar a distancia.

the veterinary and paraveterinary sectors. Participants underwent an experiential learning cycle by becoming "students", and had 'first-hand' experience in understanding how their own students learn, how best to utilize different teaching methods and how assessments can drive learning. The central philosophy of the course was to develop a reflective practitioner and this was achieved using a tutor-tutee model with formative feedback. The course was delivered in face-to-face (F2F) mode and by distance-learning (DL) to widen access and flexibility. Through the integration of F2F and DL modes, all participants experienced the use of technology in educational design and delivery. The demographics of the 152 participants of the program, which has been running since 2010, show that the majority is veterinarians working in further and higher educational institutes and are early to mid-career academics. Additionally, 25% of the participants are from outside the UK showing the need for a discipline-specific course that can be studied at a distance.

**Palabras clave:** Desarrollo docente, disciplina específica, veterinaria y paraveterinaria, cara a cara, aprendizaje a distancia.

**Key words:** Teacher development, discipline-specific, veterinary and paraveterinary, face-to-face, distance learning.

## Introduction

The learning landscape is changing: busy professionals are demanding to study in their own time and space, with the flexibility to attend courses that are directly related to their individual and employer needs, either face to face and/or at a distance, at the end of a computer (Miller *et al.,* 1998). This is raising new issues in pedagogy. How can

courses be designed and delivered that offer learning experiences that can be 'tailored' to individual needs? Does the teacher need to be in a similar landscape moving between different times and space? How can we assess such learning or should the assessments be 'tailored' too? Without understanding these issues, we will not be able to achieve the pedagogical changes that are necessary to match the requirements of varied adult learners with their demanding lifestyles and different learning needs.

Developing teachers at tertiary level, using specifically designed courses, is increasingly becoming common (Parsons *et al.,* 2012). These teachers are scholars in their own disciplines, highly motivated individuals with ambitious career paths and have many demands on their time. The further and higher education institutions in which they teach are increasingly under pressure to 'develop teachers' with the pedagogical skills to meet the needs of students paying more and more in fees. Most higher education institutes in the UK make pedagogical training a mandatory probationary requirement (Trowler and Bamber, 2005; Parsons *et al.,* 2012) whilst others actively promote pedagogical training. Using postgraduate certificate courses in higher education for teacher development is gaining popularity as a formal record of learning, and the accreditation of teachers as Associates or Fellows by the UK Higher Education Academy (Parsons *et al.,* 2012) has added impetus to this movement.

How are the teachers reacting? The individuals confronted by educational developers vary, from the very enthusiastic to the highly reluctant participants that need persuasion (Fabrice, 2010). Some are hesitant to become 'learners' doing a formal course and find 'pedagogy' an unfamiliar territory. In addition, lack of time, combined with fear of failure, also contribute negatively to this pathway of professional development as a teacher. Added to these challenges for the educational developer is the 'experienced' adult learner (teacher) with individualistic learning habits and strategies.

Designing and developing training to satisfy the demands of such a varied group requires meticulous planning. The course should 'model' modern pedagogical designs and learning experiences in a discipline in a sensitive way to convince the teachers of their value and move them through their own zone of proximal development (Vygotsky, 1978). Furthermore, assessment can provide the opportunity to demonstrate the value of formative assessment (Sadler, 1989), and how to write high quality feedback (Nicol, 2010), that supports learning needs and aids the construction of new knowledge (Vygotsky, 1978). A thorough training in reflection and its value ensures that this learning is embedded in practice (Hatton and Smith, 1995), so course participants feel confident in their ability to lead their own students to be reflective learners. Reflection allows teachers to challenge their own assumptions and beliefs about teaching and learning so that they can 'unlearn' in order to change (Macdonald 2002). In developing the curriculum, a less-structured and more 'creative' (Robinson, 2001) approach promotes flexibility, to appease the workload-heavy teacher. Using technology in course design and delivery will add to flexibility, as well as promote the use of technology to update the teachers' own digital skills so that they may get closer to their own 'digital learners'.

In the veterinary teaching sector, 'scholarship' –academic and professional– is central for teachers and their universities, an example is the Research Excellence Framework, UK (The Research Excellence Framework, 2014). Scholarship determines their reputation and the funds received, and supports the students who are recruited

based on the scholarly activities of an institution and its faculty. This means that teachers value highly a 'scholarly' approach in all that they do. Therefore, designing a training programme for such teachers must not underestimate the emphasis that is required on the scholarship of teaching and learning (Glassick, 2000). All four forms of scholarship as defined by Boyer (1989) must have a place. Despite the challenges, teachers are more likely to appreciate a course underpinned by the scholarship of discovery, integration, application and teaching and learning (Boyer, 1989).

Faculty development in the veterinary sector is a topical issue (Bell, 2013). However, initiatives to promote the development of veterinary educators are scant (Steinert and Mann, 2006) despite the urgent need to develop them in context (Bell, 2013). Veterinary clinical educators often teach in a service environment, and integrating in-service learning as scholarship in teacher development is extremely important. (Buchanan *et al.* 2002; Coffman, 2002).

The objectives of this paper are to describe a course that is designed to offer a variety of learning experiences for higher education teachers from the veterinary and paraveterinary sectors, from all around the world, and present preliminary findings on participant demographics, their perceptions and the experiences of the authors regarding the course.

## Design of the PG Cert Vet Ed

A postgraduate certificate in veterinary education (PGCertVetEd) was specifically developed for teachers in the veterinary and para-veterinary sectors. The PGCertVetEd was designed to achieve the level 2 descriptor of the UK Professional Standards Framework (UKPSF) related to recognition as a Fellow of the Higher Education Academy[1] (The Higher Education Academy, 2015). From the outset the program was designed to be discipline-focused integrating core principles in teaching and learning in higher education and to be delivered in face-to-face (F2F) or distance learning (DL) modes. Based on the first author's own experience of a Masters in Medical Education and a review of the literature related to similar postgraduate courses for teacher training in higher education (Kandlbinder and Peseta, 2009), the PGCertVetEd course was designed to:

- Model teaching and assessment practice through the course so that participants are exposed to first hand practice

- Achieve an appropriate balance between theoretical knowledge and practical application in veterinary education

- Develop participants to be reflective practitioners and to embed this practice in all their work

- Map to the UKPSF to structure the course as well as for professional recognition

- Promote research in veterinary education through a structured program culminating for those who progressed further in a MSc in Veterinary Education

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[1]   https://www.heacademy.ac.uk/UKPSF

## Six basic principles underpin the design

Six basic principles underpin the design of the PGCertVedEd:

a. Scholarship of teaching and learning in a disciplinary context (Healey, 2000).

   The scholarly approach is explicitly linked to the veterinary context, focusing on practice in the discipline, pedagogical content knowledge and exploring whenever possible links with pedagogical research in STEM and medical education.

b. Individual, personalised development based on the zone of proximal development (Vygotsky, 1978).

   The participants of the program are expected to be at varied levels of knowledge (theory) and experience (practice) in teaching and learning. Therefore the program was designed to support individual learners and help them identify their own zones of proximal development and progress at their own rate (Vygotsky, 1978). This is supported by an individual personal tutor with whom the participants are expected to work throughout the course.

c. Course structure was based on a spiral design (Harder and Stamper, 1999).

   The PGCertVetEd program is designed to achieve a theory and practice balance, in the context of veterinary education. It consists of two modules with the first module being more theoretical and the second module more practical, linked in a spiral design. For those who wish to progress to discipline-based pedagogical research, the PGCertVetEd is linked to a PG Diploma and an MSc phase in a similar spiral fashion.

d. Periodic reflective discourse in developing reflective practice (Schön, 1983).

   As participants from science-based backgrounds find it difficult to be involved in reflective practice (Kandlbinder and Peseta, 2009), a predominantly narrative focus with persistent tutor feedback is developed using the patchwork text approach offering formative and summative feedback (Scoggins and Winter, 1999; Winter, 2003).

e. Active and flexible learning approach (Shulman, 1986).

   The participants are constantly encouraged to be 'active' learners through monthly reflective discourse with tutors and peers, group activities such as developing a presentation for discussion on an 'Educational thinker', monthly journal clubs and interactions with F2F and DL peer groups to enhance technology-based teaching and learning skills. The expectation is that participants will start to develop teaching modules to support the learning of their own students based on their own learning experiences through the PGCertVetEd.

f. Constructive alignment (Biggs, 1999) of the objectives of the course to content, assessment and UKPSF

The PGCertVetEd is an outcome-based course framed on the UKPSF and objectives are mapped at unit and module level from content to assessment. This is to demonstrate constructive alignment in a transparent manner to the participants.

## Achievement of the Design

### Design features that model good practice

One of the overarching objectives of the PGCertVetEd is to model the learning of participants' students in the participants' own learning, and the expectations for participants' teaching in the teaching of PGCertVetEd. The objective of this modelling approach is to involve participants in 'experiential' learning (Kolb, 1984) so that they can better understand the concepts involved and are more motivated to change their own approaches teaching. This strikes a chord with perceptive participants.

> It struck me recently that I may have learned more from the return to a student role than from the course material itself. Much of the reading has been insightful and stays with me, but that is nothing compared to the impact of simply being a student. In essence, I am living within an experiential exercise: learning about teaching whilst teaching other learners. Which makes me wonder… have I stumbled on the denouement of this program? Are key learning objectives achieved simply by a reversion to the student state? Did the course authors intend for us to learn as much from the process as the content? (PGCertVetEd participant 1).

### Theory, practice balance and the curriculum

In order to achieve a theory and practice balance the course was designed as two modules with the first module being more theoretical to include generic theories in student learning, teaching methods, curriculum development, assessment and student feedback, and evaluating and improving own practice. The sequence in which the theory is built is important.  Participants are introduced to new concepts that should form the basic building blocks of their day-to-day practice, such as how students learn and how to map teaching methods to learning. These basic concepts lead to more complex issues of curriculum integration (understanding the curriculum and how their own role fits within the curriculum) and how to assess and support their students through feedback. At the end of the first module, participants' overall learning is put into practice for a teaching observation, which additionally enables them to critique, evaluate and improve their own practice. Throughout this module, effort is made to apply generic theories to the context of veterinary education and the methods that are most suited to the discipline. The final unit of the first module on 'evaluating and improving practice' allows the participants to take stock of their learning journey, which leads to the second module.

The second module is designed predominantly to focus on application of theory, modeled for veterinary specific issues. A spiral design, to critically integrate the learning from the first module (Harden and Stamper, 1999), is used and current issues specific to veterinary education are its focus. Developing learning materials to enable active learning (Biggs, 1999), developing student skills (clinical, communication, practical), supporting the development of self-regulated learners (Zimmerman, 2002; Dale *et al.,* 2008), developing educational strategies and evaluating educational literature are

all underpinned by the basic theory of module 1. To consolidate their practical skills development, the participants are assessed through a teaching presentation, which they have to develop jointly with a peer. An attempt is made to pair participants from different teaching/training institutes and different disciplines, such as basic scientists with clinical teachers, to foster collaborative work, exposure to different teaching and institutional cultures, and to foster interactive dialogue.

The PGCertVedEd course itself is used to demonstrate curriculum models (Grant, 2014), the spiral design (Harder and Stamper, 1999) and constructive alignment (Biggs, 1999). Participants actively map the planned, intended, delivered and assessed curriculum and are introduced to the concept of 'hidden curriculum' (Roder, 2014; Whitcomb, 2014). The course documentation is used in this mapping exercise to see how learning objectives are aligned with course content designed for teaching and learning and how the assessment achieves the learning objectives.

> The PGCert course has a modular structure with each module taking a different approach to the challenges of education, progressing from teachers' perspectives and roles to student perspectives and roles to a more institutional perspective and role on education. As mentioned in this progression we come back to the same articles and are asked to reflect on the messages in these articles in contexts of increasing complexity.

> I also find that the assignments that we are given follow the same structure, from reflecting on our own teaching and our students' learning has given us a chance for putting this reflection into operation when planning and doing a teaching session. Thus the course might actually result in a behavioral change in its students. What more can you hope for ;-) (PGCertVetEd participant 2)

The course models a student-centred approach and highlights the difference between teacher-centred and student-centred approach (Trigwell *et al.,* 1999; Prosser *et al.,* 2008). Teaching methods on both the F2F and DL mode were interactive and the activities were designed so that participants could construct their own knowledge through active learning (Biggs, 1999). The teaching observation process was another opportunity to reinforce the student-centred approach. The expectation is that the program will result in greater confidence on the part of new teachers through an impact on the self-efficacy beliefs of the participants stimulated by the pedagogical training (Postareff *et al.,* 2007).

## Developing Reflective Practitioners

A number of strands within the PGCertVetEd aim to stimulate meaningful reflection on the part of participants and encourage synthesis of practice, theory and experience.

### Novel approach to teaching observation/assessment/development

Teaching observation is an integral part of many teacher development programs in HE (Bell and Mladenovic, 2008). We used teaching observation as one of the main assessment components of module 1 and adopted the 'educational developers as observers model' that is increasingly used by institutions in UK higher education (Hatzipanagos and Lygo-

Baker, 2006). Critical reflection was integrated with the teaching observation via a pre-observation patch and a post-observation patch. The observees had to outline the intentions of the teaching session in advance and establish the focus and criteria for the observation. This was followed by active observation, for appropriate data collection, and a two-way discussion and feedback. The challenges of observing DL participants were resolved by getting the DL participants to video the teaching session and observe it with the tutors for feedback and discussion. This process worked very well, and both observees and tutors were satisfied with the outcome. However, it was important to compare the distance teaching observation with the traditional, research-proven methods. In 2012, a study was conducted to explore the effectiveness and the participant and tutor perceptions of both F2F and DL. There was no difference between F2F and DL participants with regard to the perceptions of the value of teaching observation as a developmental tool: both groups concluded that the teaching observation was the most valuable aspect of the PGCertVetEd course. The DL model also had the advantage of allowing the participants to watch their teaching several times and critically analyse themselves to a greater extent than the F2F participants. There was also a two-week delay period between the teaching session and the tutor feedback (time to get the video to the RVC), which allowed the participants to constantly 'mull-over' the event. All the tutors were convinced that the DL participants had undertaken a more in-depth analysis of their teaching due to the time gap between the teaching session and feedback. Based on the results of this study (Silva-Fletcher *et al.,* 2015), the following changes have been made to the teaching observation process of PGCertVetEd:

- all F2F observations have been converted to DL mode and all the participants have to video their teaching session, watch it and critically analyse it and write the post-observation reflection before the discussion of feedback session;

- the video has to be submitted to RVC PGCertVetEd team within two weeks;

- all students have an individual feedback session with their tutor; and

- based on all stages of the teaching observation process, the tutor assesses the teaching session.

Currently a follow up study is underway to assess the new format and to evaluate whether this process leads to deeper reflection.

## Course delivery and participant interaction between different delivery modes

The participants for both F2F and distance modes received an induction for the program through a specific day on-site for F2F group and via a skype-based online process for distance participants (participants were grouped based on time-zones). Some distance participants (including overseas) travelled to attend the on-site induction to meet fellow participants and tutors. The entire PGCertVetEd course has been developed as an online course, and both F2F and distance participants have to join and contribute to the online course for the welcome and other discussion forums. The discussion forums are linked to the study units and have been very effective in engaging distance and F2F participants. Some F2F participants enjoy the interactive dialogue with participants from overseas. The asynchronous mode suits these busy professionals. Some examples of synchronous interactions include:

- The monthly journal clubs, which are another opportunity for interaction. These synchronous discussions are facilitated by a tutor leading the F2F discussion with distance participants connected via Adobe connect software. At times if the groups are too large two sessions of the journal clubs had to be held. With the permission of participants, patchwork assignments and teaching observation videos are also shared for peer evaluation.

- Developing a teaching presentation, which is part of the assessment for module 2, and another opportunity for peer interaction.

  These joint developments are facilitated using the online platform. Overall distance participants use and have the most benefits from participant interactions, both synchronous (journal clubs) and asynchronous. However this has not yet been evaluated in detail and further research and a publication on the virtual classroom is planned.

- The "Educational Thinker" presentation.

  During the induction to the course participants were asked to select a "big" educational thinker who has been influential in shaping the current educational practices. The selection was aided by offering a list of educational thinkers accompanied by a quotation that either describes the "thinker's" contribution, or an extract from their work. The participants were also paired for this activity, which led to some of the most enjoyable presentations during the program. Presentations included both standard and novel approaches, such as role-play, enactments, story-telling debates and hands-on practice, to demonstrate educational concepts. Distance participants joined via synchronous media using Adobe Connect and 2 -3 presentations were held during each second module workshop. Every effort was made to map the educational thinker presentations to the workshop themes to help the participants to recognise their relevance and make triangulation points for reflection.

## Engagement with educational literature

In general, there was much discourse regarding educational literature, both in the F2F workshops and on the DL discussion forums. As most participants had science-based backgrounds and were familiar with scientific literature, quantitative research methodologies and positivist paradigms, they were challenged by the qualitative research methodologies.

> I accepted some time ago that one has to adopt a different way of thinking in order to be comfortable with educational literature. It can be very theoretical in nature, with limited attempts to provide definitive evidence for the assertions made. Instead, competing theories are laid out by different writers, which sometimes seem vague and are usually only tested qualitatively, if at all. Alongside this, there is clearly a specialist vocabulary associated, which one has to come to terms with (PGCertVetEd participant 3).

The style of writing and the 'vocabulary' was considered difficult:

I find educational papers can be 'wordie', which sometimes helps me to understand the paper better, particularly if it is talking about theories and concepts. However, other times I find myself losing sight of the main points in the all the text, and so I would go back to read over and over again and get a bit frustrated (PGCertVetEd participant).

X raises a good point about the vocabulary and I believe that the vocabulary is a bigger issue than necessary.  The vocabulary of educational literature seems both outdated and cumbersome to me. Take the overuse of the words andragogy and pedagogy. Is it because the science of teaching is so old that we feel obligated to use ancient words? (PGCertVetEd participant 4).

Evaluating educational literature formed one theme of the second module and was delivered towards the end of second module. Participants found this theme to be extremely useful and also commented that it is appropriate to deliver this theme in module 2 after they have experienced reading educational literature in module 1 and have identified the problems and issues they have faced. However, they thought that it would be useful to explore this theme at the start of module 2 rather than later; so, based on extensive feedback from the participants, this theme is now delivered at the start of module 2.

## Developing critical reflective writing

Reflective writing is challenging for many participants who have a science-based background. The patchwork text approach (Scoggins and Winter, 1999) supported the development of critical reflection by integrating new learning from the PGCertVetEd modules with participants' own experiences. The participants had to write a patch (a short reflective essay) every month, after studying the relevant unit, and were given formative feedback by their personal tutor. At the end of the module, participants submit an integrated reflective essay combining all the study units, which is summatively assessed. This iterative development in reflective writing, through formative feedback from the tutors, with guidance to relevant literature for individual interests, has proven successful in developing and improving critical reflective writing of PGCertVetEd participants (Silva-Fletcher *et al.,* 2014). Receiving formative feedback which was part of the 'teaching' or 'developmental' activity of the PGCertVetEd was hard for some participants who frequently requested a summative grade together with the formative feedback (Gioka, 2009). In general participants found the monthly patchwork assignments time consuming and difficult. However at the end of the program most participants agreed that these helped them to:

- analyze and internalise the new educational concepts offered throughout the course

- understand reflective writing so that when they have to assess the reflective essays of their students they are now able to perform that with confidence

- see how to do 'written feedback' more effectively as they could see how regular formative feedback from the tutors was structured to foster their reflective writing

## Mapping to UKPSF values

A detailed map was produced to ascertain that all the UK Higher Education Academy's areas of activity (UKPSF A1 to A5), core knowledge (UKPSF K1 – K6) and professional values (UKPSF V1 –V4) were achieved through the course content and assessments. In the mapping process, several areas of the UKPSF had to be clarified with examples so that the teaching development team and the participants could develop common understanding with regard to the teaching and assessment processes. This difficulty in interpretation, specifically by science-related disciplines, is one of the findings of the UKPSF review conducted between 2012 -2013 (SEDA, 2013). Another key finding from the institutional representatives' survey was that 75% of respondents identified other frameworks that were important to the institution, most notably discipline specific professional standards frameworks (SEDA, 2013). Our experience is supportive of this finding and further work is necessary to expand the UKPSF to achieve both clarity and compatibility with discipline-specific professional standards.

Participants had to prepare their own maps and submit these at the end of the program. A core template for mapping was made available online on the course site and the participants were regularly encouraged to fill the map. The participants often commented that the UKPSF is too broad and vague and they needed support to interpret it and relate it to their practice. Only a few participants did the mapping exercise as a regular activity and most participants filled the map at the end of each module.

## Participants in the PGCertVetEd

Since the start of the program in 2010, a total of 107 participants have completed the program and another 45 are currently enrolled. Although the program was initially developed to train RVC faculty, with the advent of the DL program a considerable number of non-RVC participants have undertaken study (Figure 1).
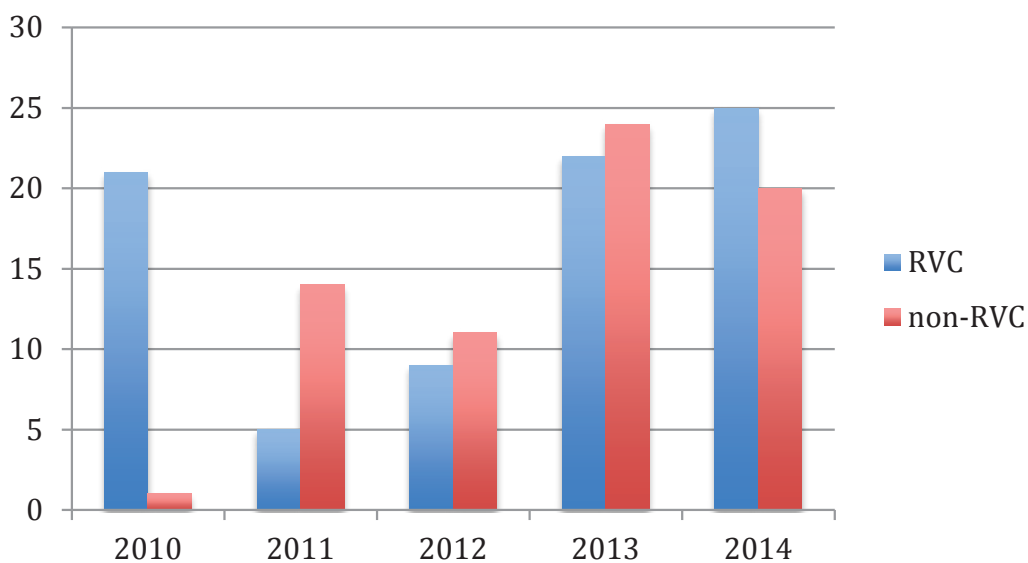


**Figure 1.** Since the start of the DL program in 2011, non-RVC participant numbers are similar to the RVC participant numbers.

Although most non-RVC participants study by DL, some UK participants attend the monthly workshops, which are held at the RVC for F2F participants. Most participants are from the UK and the second largest group is from USA and Canada (Figure 2).
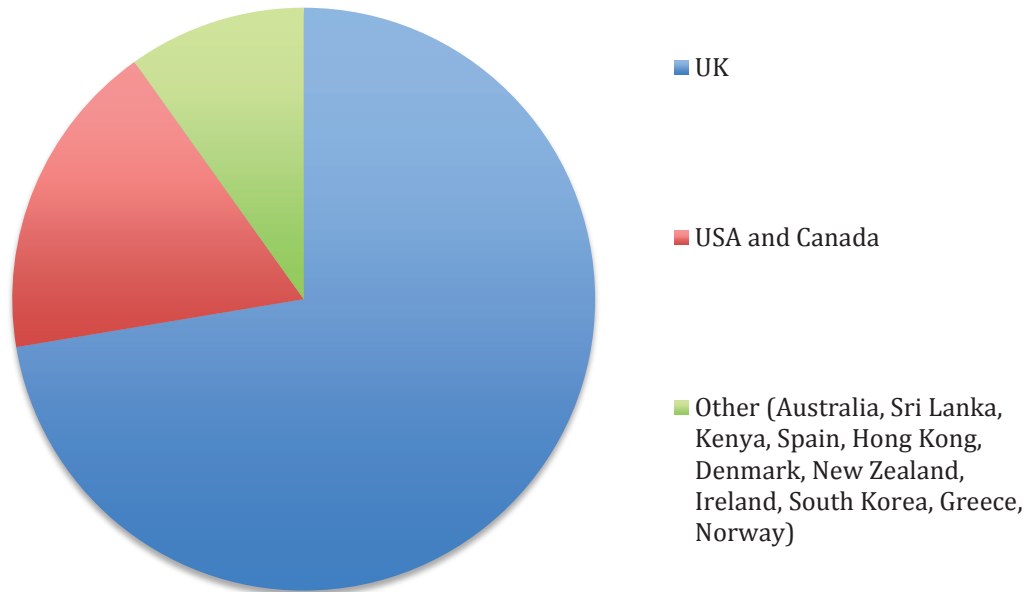


**Figure 2.** Participant locations, showing the geographical distribution of those who have studied/are studying the PGCertVetEd.

The participants' workplaces are generally either a higher education or further education institution (Figure 3). The course is targeted at those teaching in HE or FE sectors; however it is suitable for those involved in teaching and training in other sectors and an increased effort is made to disseminate information and recruit from non-HE/FE sectors.
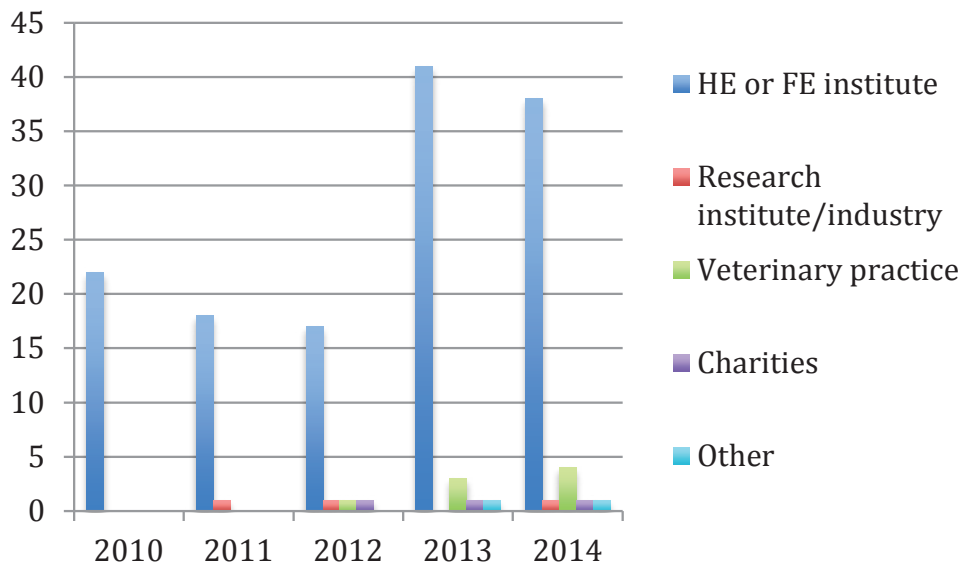


**Figure 3.** Workplaces of Participants in PGCertVetEd.

Most participants have a professional qualification in veterinary medicine (Figure 4). The scientists who teach in veterinary HE or related FE institutions also

participate in the program and they form the second largest group. The number of participants from the veterinary nursing and veterinary technician sectors is slowly increasing.
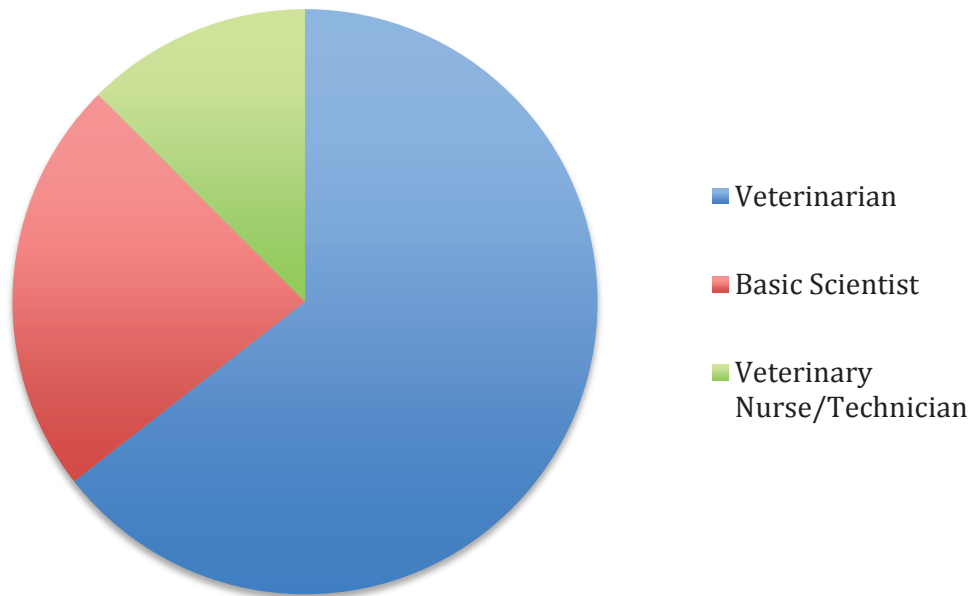


**Figure 4.** Professional background of Participants.

The participants have varied roles within their workplaces (Figure 5). The uptake included those new to teaching as well as more experienced and mature academics in senior roles. As this is the first discipline-specific postgraduate certificate in veterinary education, it is possible that a number of staff in senior positions used the opportunity to explore the course so that they can in turn recommend the course to their less senior academic staff. Although the largest number are mid-ranking academics, more and more junior academics and those who aspire to a career in academia are applying for the course.
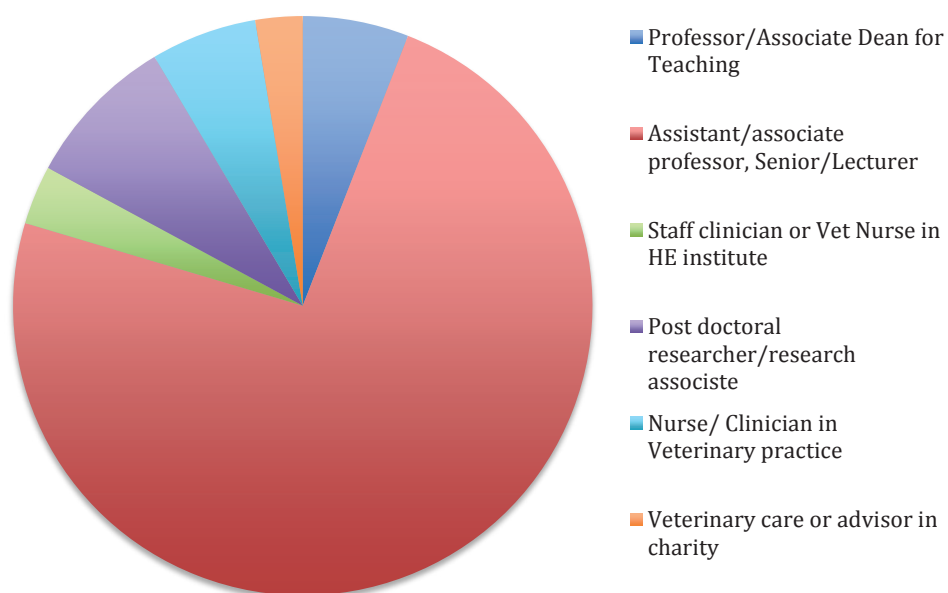


**Figure 5.** Roles of Participants in their Own Workplaces.

## Discussion

Historically, very little effort was put into developing university faculty as educators (Harden and Stamper). It was assumed that if you had expertise in a discipline that you ought to be able to teach and pass your knowledge on to your students. However, detailed analysis of individual faculty reveals clearly that this assumption was often unfounded (Hativa, 1998). In the last 20-30 years, the development of a culture of the "student as customer", combined with greater external scrutiny by those who fund teaching – governments, funding agencies, and, increasingly, students themselves – has stimulated much greater attention to the quality of teaching and the student experience at university (Harper and Lattuca, 2010). This has led to a proliferation in Postgraduate Certificates and Masters programs in higher education that in some countries provide "recognized higher education teacher status" (e.g. Fellowship of the Higher Education Academy in the UK) (The Higher Education Academy, 2015).

A problem for those in science-related disciplines has been the difficulties that those with a scientific background have in understanding and accepting the conclusions of educational research reviews and relating these to their practice (Kandlbinder and Peseta, 2009). This has led to calls for more attention to discipline-focused pedagogy and appropriate contextualization of teaching for different educators (Jenkins, 1996; Healey, 2000). Medical education has been a leader in this, with the creation of Professors of Medical Education and various Postgraduate Certificate and Masters programs focused on medical education specifically (Lionis *et al.,* 2011; Leinster, 2011). The scholarship is supported by the growing field of medical education research which specialist medical education journal editors are now pushing to higher and higher levels of quality (Norman, 2014).

There are direct parallels with the development of veterinary educators. The progress described here is the result of years of struggling (and failing) to achieve widespread acceptance of two different generic Postgraduate Certificates in Higher Education (Silva-Fletcher and May, 2015). A valued privilege of the veterinary school where the authors work is that it is not part of a multi-faculty university, so it has no history of a central university generic educational development unit.  This means that the authors have had the freedom to develop a customized veterinary educator-focused program.  The lesson for Deans and Associate Deans for Academic Affairs that they would share though are the need to secure for their faculty as close to a discipline-focused program as they can.  The senior author's personal experience with a medical education program would indicate that this is much more appropriate for most scientists and clinicians than a generic higher education course, and if Deans are able to negotiate specific modules targeting veterinary skills development, such as (animal) patient-side teaching modules, this will be even better.

The authors both have considerable experience of teaching at undergraduate, Masters and PhD levels in basic and clinical sciences and education, including the use of qualitative and quantitative research methods. This means that they have encountered a very diverse range of students with a huge variety of learning needs. On the basis of this, they can confidently say that the most enjoyable teaching in which they are engaged and also the most challenging "students" with which they work are veterinary educators! The vast majority of participants indicate that at least one aspect of their teaching has

changed as a result of engagement in the program, and for some the experience is transformational, leading to many more wanting to progress further (to Masters level) than contractually required by the veterinary school (sometimes giving their heads of section organizational difficulties as they cannot let the whole of a clinical service take part at the same time). The program has also produced an unforeseen benefit across the school, with a cascade effect in terms of pedagogical discussions in different units led by Masters graduates who are now much more confident in their own teaching and keen to provide support to their colleagues.

The challenges the authors face from the participants fall into two main categories: the "whys" and the "relevance to my teaching". Frequently faculty "get away" with quite poor teaching to veterinary students because they do not have to explain "why" or "relevance" (students will assume that one day anatomy will be relevant to surgery). As far as practical skills are concerned, students will often accept "how to" when it comes to physical examination or a surgical technique (Jones, 2008), leading to a perpetuation of eminence-based approaches even in this so-called evidence-based age (May, 2012). In contrast, veterinary educators will not accept explanations of "how to" teach unless they understand "why", and particularly if the evidence is qualitative, they will need a clear justification as to why they should accept it. In addition, they want help with how all this can lead to worthwhile changes in their classes and new designs that have a good chance of working first time. They also want all this delivered in a timely manner, that both fits around their other research and service commitments and their timetabled teaching.

The enjoyable aspect of all this is the way in which every challenge and question can be turned into a lesson. Participants can reflect on evidence which they currently use (often none) to inform their assessment and teaching practices. They often start to see that poor student feedback may, in part, relate to not explaining the "whys" of their own teaching and clearly indicating its relevance as part of the overall veterinary program for their students. Participants' own demands for "security", in the form of grades rather than narrative feedback on their reflective pieces, can also be contrasted with their own despair of students whose whole focus is on grades and examinations rather than their learning journey towards being a competent professional (McKenna, 2005).

Much has been made of the responsibility of modern educational programs to maximize the student experience for every individual (Sawyer, 2008). This includes recognizably relevant content, appropriately contextualized, and flexibility regarding delivery. The F2F format has given rise to a DL variant during the period under study, and within course regulations elements of each can be formally mixed to create a blended learning program. The original F2F format had a delivery model based on whole day workshops delivered once a month, linked to participant assignments and assessment. This has now given rise to a fourth variant, that will involve three blocks of five days for the PGCert program, and is designed to cater for individuals who prefer F2F contact but whose distance from London precludes travelling on a repeated single day basis. Every individual would clearly like a variant that perfectly relates to their needs and wishes. However, this comprehensive set of delivery modes balances flexibility with efficient educational delivery.

## Conclusions

This description of and experience with a discipline-focused teacher development program for veterinary educators is offered as one model for this important responsibility of senior management teams in veterinary schools.  Inevitably, it involves more investment at the set-up stage, but the authors would argue that it has been a major development in the educational culture of their veterinary school and supported a cascade of pedagogical discussion, beyond the core team, that continues to grow.  There is increasing evidence that this program enhances both the enjoyment of their teaching for faculty and reduces one of the anxieties associated with interactive formats, where particularly junior faculty can feel vulnerable and find it hard to promote meaningful discussion.  All this supports the view that at least a part, if not all, of any university-provided development program intended for veterinary educators should include a discipline-focused component.

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