

The 2nd Veterinary Education Symposium

13th and 14th July 2011

School of Veterinary Medicine and Science
University of Nottingham



Welcome to the 2nd Veterinary Education Symposium

The Veterinary Education Symposium is an annual event that rotates around the UK veterinary schools. The aim is to promote veterinary education and share ideas, innovation and best practice.

The second veterinary education symposium (2011) is being held at Nottingham Veterinary School and follows on from the LIVE symposium held at the Royal Veterinary College last year. The symposium will be held in Edinburgh next year.

The theme for this year is innovation, and we are delighted to welcome Sir Peter Rubin, Professor Gary England and Dr Andrew Gardiner as our keynote speakers. Sir Peter is the chair of the General Medical Council and will speak about "Innovation in professional degrees". Professor England will talk about establishing the UK's newest veterinary school. Dr Gardiner will talk about historical aspects of innovation in veterinary education.

We have more than 40 interactive poster presentations in three sessions and have contributions from staff, researchers, practitioners and veterinary students. There are nine workshops (delegates can select one to attend on each day) and topics covered include student support, teaching clinical skills, graduate attributes (that ease the transition into practice), eLearning, workplace learning, virtual patients and numeracy development.

We are extremely grateful to our sponsors MEDEV, the University of Nottingham and the RCVS Trust. We hope that you will enjoy the symposium and will join us at future events.

The Veterinary Education Symposium Committee

The committee has representatives from:

School of Veterinary Medicine and Science, University of Nottingham

Royal Veterinary College, University of London

Royal (Dick) School of Veterinary Studies, University of Edinburgh

School of Veterinary Science, University of Liverpool

Bristol Veterinary School, University of Bristol

Faculty of Veterinary Medicine, University of Glasgow

Cambridge Veterinary School, University of Cambridge

Symposium Programme

Day 1 – Wednesday July 13th

Time	Event	Where
11.30	Registration and lunch	Atrium
1230	Conference opening	A30 (lecture theatre)
1245	Key note 1 Professor Gary England	A30 (lecture theatre)
1315	Key note 2 Sir Peter Rubin Questions/discussion	A30
1400	Tea break	Atrium
1415	Poster session 1	A29
1530	Workshop 1	Various
1700	Informal Poster discussion/networking	A29
1900	Conference dinner	Octagon Restaurant, Sutton Bonington campus (bar will be open from 1830)

Day 2 – Thursday July 14th

Time	Event	Where
0900	Refreshments available	Atrium
0930	Poster session 2	A29
0930	Poster session 3	A10
1100	Tea break/informal poster discussion	Atrium
1130	Workshop 2	Various
1300	Lunch	Atrium
1345	Keynote 2 Dr Andrew Gardiner Questions/discussion	A30
1430	Key issues – wrap up	A30
1500	Close and tours of facilities	Various

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DRAFT

KEY NOTE SPEAKERS

Professor Sir Peter Rubin: “Innovation in professional degrees”

Day 1: July 13th 12.45

Peter Rubin is the current chair of the General Medical Council, the regulatory body for doctors in the UK. His career has influenced the education and training of many doctors through his chairing of the GMC's education committee and the Postgraduate Medical Education Training Board (PMETB).

Peter is a specialist in clinical pharmacology, with research and clinical interests in safe and effective prescribing during pregnancy. He has been Professor of Therapeutics at the University of Nottingham since 1987, and he still sees patients in Nottingham.

During his time as dean of Nottingham Medical School, Peter was instrumental in setting up both the Graduate Entry Medical School at Derby and Nottingham Veterinary School.

Peter was knighted in 2010 in recognition of his significant contribution to medical regulation, education, research and clinical practice.

Peter's talk will examine innovation within the professional degree context.

Professor Gary England: “Taking the opportunities in a new veterinary school”

Day 1: July 13th 13.15

Prof Gary England is the Foundation Dean of the School of Veterinary Medicine and Science and is Professor of Comparative Veterinary Reproduction at The University of Nottingham. Graduating from the Royal Veterinary College in 1986, Gary became a Fellow of the RCVS in 1993 and a Recognised Specialist in Veterinary Reproduction in 1996.

Gary is an academic clinician who undertakes clinical work and research in the field of reproductive biology in dogs and horses. This work is designed to both enhance and to control fertility in these species, and he has produced over 200 publications on these topics.

The School of Veterinary Medicine and Science at The University of Nottingham is the first new veterinary school in the UK for over 50 years: the first cohort of students will be graduating this summer.

Gary's talk will cover innovation from the perspective of the newest veterinary school in the UK.

Dr Andrew Gardiner: “It's behind you! Looking back to move forwards in veterinary education”

Day 2: July 14th 13.45

Andrew graduated from Edinburgh in 1992. He was initially interested in horse practice but ended working with small animals. Andrew worked in private practices and with the Blue Cross and PDSA, and did an RCVS Surgery Certificate from practice in 2000. In 2004, he took 'a year out' to do an MSc in History of Science, Technology and Medicine at Manchester University. This led to an invitation to do a PhD in the same department, funded by the Wellcome Trust.

Andrew's PhD looked at clinical, professional, business and ethical issues in 20th century British veterinary practice. Since 2007, he has been a clinical lecturer at Edinburgh, in the Veterinary Teaching Organisation

Andrew's talk will examine a historical perspective on the conference theme of 'innovation'.

INTERACTIVE POSTER SESSIONS

DAY 1: July 13th 14.30–16.00

INTERACTIVE POSTER SESSION I: Curriculum and veterinary education

N.B. Posters are organised in presentation order. The format is 2 minutes to present & 2 minutes for questions

1. A consensus statement on a communication skills curriculum for veterinary professionals in UK and Ireland

K. Griffiths, C. Gray¹, L. Mossop² and I.J. Robbé³. ¹University of Liverpool, School of Veterinary Science, UK. ²School of Veterinary Medicine and Science, University of Nottingham, UK. ³Centre for Applied Public Health Medicine, School of Medicine, Cardiff University, UK.

A consensus statement was produced to define the overall purpose, specific intended achievements and content of an undergraduate veterinary professional communication skills curriculum for the UK and Ireland, applicable to both veterinary surgeons and veterinary nurses. Using the Nominal Group Technique, members of the National Unit for the Advancement of Veterinary Communication Skills (NUVACS) produced an initial consensus statement, which was refined by an iterative process of electronic-mail correspondence and face-to-face meetings.

This process resulted in the development of a 'wheel', a diagrammatic representation of the key subject domains of veterinary communication, set within a background of four basic principles underpinning all veterinary practice: professionalism, ethical and legal principles, evidence-based practice, and reflective practice. Each subject domain (respect for others, theory and evidence, tasks and skills of the veterinary consultation, the client-animal relationship, specific issues, media, and communication beyond the client) was represented by a concentric ring of the 'wheel', and supplemented by a detailed description of its content. Rotation of the rings can be used to facilitate selection of combinations of parameters for development of teaching material, applicable both to undergraduate and post-graduate teaching of communication skills.

2. Communications – a contemporary challenge and opportunity in veterinary and human medical education

I. J. Robbé. Centre for Applied Public Health Medicine, School of Medicine, Cardiff University.

PURPOSE: This abstract questions whether as educators we are prepared to take the opportunity for teaching and learning about communications. This opportunity has been created by the changes in the practices of veterinary and human medicine in the past one hundred years.

THE CHALLENGE: The Flexner report (Flexner 1910) caused seismic changes in human medical education and the implications are still being felt today (AFMC 2010; Dornan, McKendree et al. 2011). Veterinary education is in a similar situation (Robbé 2003). The changes constitute a Kuhn-like shift (Friedman 2003) in thinking away from a predominance of knowledge and technical competencies, our roles as scholars, scientists and technical practitioners, towards an increased weighting for affective competencies, our roles as professionals.

THE OPPORTUNITY: This shift invites the greater use of the humanities and social sciences in order to improve learning about communications with clients, other professional colleagues and the wider society. Bourdieu's work (Wacquant 2002) can be interpreted as offering a mechanism for this learning through the access to resources that frame an individual's communications' competencies. These resources include: cultural – speech, clothes, aspirations, interests; societal – people, rules, power, behaviours in work settings and elsewhere; economic at the micro-level – photocopier, printer, office, segregation, offsite work; environmental at the macro-level – university, government, regulatory bodies.

CONCLUSIONS: Three questions are posed for educators: (1) what principles underpin your practices? (2) to what extent do you agree with the description of the challenge? (3) what options can you identify to respond to the opportunity?

3. Final year student and recent graduates opinions on attributes which ease the transition into the veterinary profession

S.M. Rhind¹, S. Baillie², T. Kinnison², D.J. Shaw¹, C.E. Bell¹, R.J. Mellanby¹, J. Hammond³, N.P.H. Hudson¹, R.E. Whittington¹, N. Stansbie⁴ and R. Donnelly⁵. ¹Royal (Dick) School of Veterinary Studies, Edinburgh, ²Royal Veterinary College, London, ³Faculty of Veterinary Medicine, Glasgow, ⁴Roker Park Veterinary Centre, Sunderland, ⁵Careers Service, Edinburgh

The project aimed to establish the attributes which recent veterinary graduates consider ease the transition from the undergraduate student environment to working as a member of the profession and compare to those of final year students. Three veterinary schools in the UK were involved in the study. Recent graduates and final year students were asked to rate 42 individual attributes on a 5 point Likert scale from 'Very important' to 'Not at all important'. Focus groups and interviews were conducted to explore the quantitative results further.

There was a high level of agreement between the cohorts with communication skills, problem solving and decision making skills, recognition of own limitations and the ability to cope with pressure all unanimously rated as important or very

important. Business acumen, knowledge of veterinary practice management and research skills were the 3 attributes ranked at the bottom of the list. Nine attributes were ranked significantly differently ($p < 0.05$) by the two cohorts. Recent graduates and final year students rate highly the attributes which help foster the client/vet relationship. The study confirms the importance to recent graduates and final year students of non-academic attributes in the transition to working in the veterinary profession.

4. Integrating learning activity design and the development of graduate attributes

D. Cashman, S. More, F. Mulligan and M. Doherty. University College Dublin, Republic of Ireland.

This poster explores the development of graduate attributes through the design of learning activities and active student engagement in an online distance-learning graduate programme, aimed at veterinary practitioners.

The Graduate Certificate in Dairy Herd Health was developed by University College Dublin in response to the changing nature of dairy production in Ireland and a requirement for higher standards of dairy herd health. The Irish dairy industry currently enjoys a reputation for good standards of animal welfare, environmentally friendly production systems and safe food products. In order to ensure that good standards and profitable production systems are sustained in future, it is important that large animal practitioners adopt integrated disease prevention programmes.

Graduates of the programme will acquire new knowledge, and a range of necessary skills and attributes, which will enable them to implement herd health and production management programmes on dairy farms. The programme team identified a matrix of attributes, which included problem solving and critical thinking; team-work and communication skills; and the ability to apply knowledge to range of herd health scenarios. A curriculum wide approach was then undertaken by the programme team to integrate the development of graduate attributes in the teaching and learning strategy. As a result, a range of contextualised learning activities, and learning resources were designed to provide opportunities for students to practice, and to integrate skills and attributes into work based scenarios.

This poster will focus on one module of the programme and will delineate the sequencing of learning activities, learning resources, tutor supports and student feedback. Surveys indicated that students believed they had greater confidence in their abilities to solve unfamiliar problems, to work as team members, and to explore ideas confidently with other people as a result of their studies.

5. Linking key professional skills with crucial life skills: An experiential program for veterinary students

M. McArthur. School of Animal and Veterinary Science, University of Adelaide, Australia.

BACKGROUND: Key attributes of professionalism include self-care, ethical behaviour, effective interpersonal skills and self-awareness. These key attributes of professionalism are also crucial life skills. While it is recognised these competencies are important, it is often difficult to present them to students in a way that is relevant and meaningful. A teaching initiative was developed to link professionalism with life skills with the aim of equipping students with practical skills for success in veterinary practice.

METHODS: Key professional attributes were linked with a program adapted for teaching; "The 16 Guidelines for Life". Students participated in self-reflection, peer reflection and other experiential activities during the 2-day workshop to equip them with practical life skills. Participation was not mandatory and a total of 30/44 students attended the workshop in the week preceding the beginning of Semester 1 of the Doctor of Veterinary Medicine. Nineteen students completed the survey.

RESULTS: Key qualitative themes in relation to the effectiveness of the workshop included 'tools to enhance self-awareness', 'opportunities to reflect and refocus on the profession' and 'enhance self-care'. Quantitative analysis suggested all students bar one, either agreed or strongly agreed the workshop was beneficial and relevant to their professional development and sixteen respondents agreed or strongly agreed the workshop was enjoyable. All other responses were neutral.

DISCUSSION: A two-day trial workshop was received well by students. By linking key areas of emotional self-development with professional skills and attributes, a platform was provided for the students to see relevance and benefit in developing these skills.

6. No more lame excuses

O. Atkinson. Lambert, Leonard and May Farm Vets, Shropshire, UK

Why is lameness such a difficult disease to influence through conventional health planning? How can intervention plans be used to reduce dairy cow lameness on farm? Arguably there may be a deficit of evidence-based advice available, but this poster presentation deals with the more ethereal aspects of influencing change on farm.

The Cycle of Change used as (adapted from the transtheoretical model of change proposed by Prochaska and DiClemente, 1998) can be utilised by the veterinary adviser to adapt his/her approach to best influence and motivate farmers, and

achieve good compliance with best practice methods. The concept has been used in development of the DairyCo Healthy Feet Programme, a national industry lameness reduction campaign launched in 2011.

7. XLVets FarmSkills: training the trainers of the future

A. Curwen, S. Throup. XLVets, Carlisle House, Dalston, Carlisle UK.

This poster reports on the success of the Train the Trainer programme that has been put in place within the context of the XLVets FarmSkills programme. By providing vets with some basic communication and teaching tools such as the learning cycle from Honey Mumford and power open questions, the quality and effectiveness of the instructional training delivered has been significantly enhanced. In addition the new skills learnt have led to other beneficial application in the teaching of students “seeing practice” and the interaction with farmers as partners in farm health management.

8. The Veterinary Business Management Association – students leading the way?

F. Latooij, A. Banerjee and S. Baillie. The Royal Veterinary College, University of London, UK.

The Veterinary Business Management Association (VBMA) is a student led organisation that focuses on the professional development of fellow students. The main drive of the VBMA is increasing business knowledge, creating network opportunities and empowering students to achieve their professional goals. Originating in the United States, the VBMA made a leap across the Atlantic to the shores of United Kingdom, when The Royal Veterinary College (RVC) in London opened the first European chapter in 2007 – the RVC-VBMA.

Every year the RVC-VBMA holds a variety of events where professionals associated with a wide range of veterinary businesses are invited to speak to students and staff. Speakers have included Pete Wedderburn (veterinary journalist & columnist for The Telegraph), Andrew Curwen (CEO of XLVets), Bruce Maclean (Birds & Exotic Animal Veterinary Services) and many more. An annual symposium event showcases veterinary business initiatives with guest speakers invited to share their experiences. The 2011 symposium showcased the topic of ‘Alternative Careers’ and was followed by a presentation on the future of farm animal practice with particular emphasis on the new graduate’s perspective.

The RVC-VBMA prides itself on providing a wide range of excellent speakers, and has recently become more involved with the RVC’s business curriculum. Since its inception in 2007, the RVC-VBMA has offered a student-led initiative that enhances professional and business education for students with input from experts in veterinary business and management. The RVC-VBMA has gained accreditation from the RVC and dedicated members will receive certificates at graduation.

9. Vets4Pets Business EMS programme

K. Clayton-Johns, J. Gasgoyne, T. Trimble and N. Ragsdell. Vets4Pets and School of Veterinary Medicine and Science, University of Nottingham, UK.

The programme is a run over two weeks and takes place in our Support Centre in Nottingham. So far three students have successfully completed the course. It is led by our heads of department, each an expert in their field, and takes the student through the lifecycle of a practice from start up to sale.

Week 1. Module 1: Commercial planning/business set up, Property & Business Development, Business plan/Financial projections - 5 year. Module 2: Creating the Employment Relationship, The recruitment process, Planning your team, Advertising, Discrimination, Interview and selection, Offer letters and contracts, Statutory benefits, Probationary period. Module 3: Launch Marketing, Segmentation, targeting and positioning, Advertising & communication channels, Messaging, Analysis, Return on Marketing Investment. In addition: Understanding of Key performance indicators, Business plan finalised, Response to Competitor Opening, Practice visits.

Week 2. Module 4: Finance Model/Accounts, Understanding a P&L and evaluation process, Problem & solution exercise, How to evaluate business performance, Review of their business accounts; critical evaluation with recommended solutions. Module 5: Marketing to drive sustainable business growth & lasting client relationships, Introduction to Marketing - a bit of theory, Client types and appropriate communication tools. Module 6: HR legislation and process, Key processes and procedures, Maternity, Sickness, Tribunals, Disciplinary. Module 7: Sale of business, Getting the business ready for sale, Valuation process, Offer. In addition: KPI evaluation, Practice visits.

10. Sustainable high quality veterinary post-graduate education in low-income countries where the Brooke is working

C.E. Reix, J. Subirana, J. Harvey. The Brooke, 30 Farringdon Street, London, EC4A 4HH, UK

Introduction: The Brooke is an international animal welfare organisation dedicated to sustainably improving working equine welfare in the World’s poorest communities. Quality veterinary services are mostly inaccessible by impoverished people, in low-income (developing) countries (Cheneau et. al. 2004), who form the majority of working equids owners (Pritchard et. al. 2005), leaving a great need for quality working equine veterinary services. Brooke provides veterinary treatment and programmes covering animal health and welfare. Historically post-graduate Brooke veterinarian training was provided by travelling UK veterinarians. As Brooke expands geographically, more sustainable approaches are needed.

Methods: Five Brooke countries (Egypt, Ethiopia, India, Jordan, Pakistan) formed and trained Senior Veterinary Training Teams (STT) during 2010. Countries identified suitable veterinarians for STT, including experience, capability and attitude to become veterinary trainers. Workshops for STT facilitated skill development including technical equine veterinary, student-centred participatory learning and teaching methods, peer teaching, problem-solving, information management and informed decision making (Klemm 1994).

Results: STT are presently delivering quality, up-to-date, animal welfare friendly veterinary training to veterinarians, veterinary assistants, and animal owners, using effective participatory teaching methods, building confidence, and knowledge in learners. Learners evaluate training and trainers self-evaluate.

Discussion and Conclusion: Developing Brooke STT supports quality sustainable working equine veterinary treatment. Results are evident, quality training planned and completed, training in local languages, field staff delivering appropriate training as needs are well understood, more people reached than previously possible, motivation increased. Participatory teaching techniques encouraged in others, as well as knowledge. Continued support given to STT ensuring quality, up-to-date training.

11. How prepared are A-level biology students for independent learning at university? Student perception of problem based learning

R. Archer and S. Töttemeyer. School of Veterinary Medicine and Science, University of Nottingham, UK.

Problem based learning (PBL) is often first encountered by students when they reach university and the transition from their old education methods can be a struggle. Introduction of this learning style prior to arriving at university may aid the transition into higher education and to ensure that students can study in an effective manner. This study investigated the perception of the PBL learning style of students studying for A-levels at a FE college. It was thought that student engagement would depend on motivation and ability, which in turn would affect the students' perceptions of the experience.

This study compared the perceptions and experiences of students taught A-level biology for one week via PBL methods with those of students taught using a traditional lecture-based style of teaching. Questionnaires were used to determine motivation, future plans and study strategies prior to teaching, and student perception of the learning experiences after the teaching sessions.

It was found that students in both classes appeared motivated to learn, however, the PBL students enjoyed the experience significantly less than the non-PBL students and a greater proportion felt unsatisfied with the knowledge they felt they had gained. The lack of enjoyment seen in the PBL, might be due to the short amount of time they had to adapt to the learning style, creating an element of discomfort that led to less enjoyment.

12. Making the transition to vet school

S. Töttemeyer and K. Cobb. School of Veterinary Medicine and Science, University of Nottingham, UK.

CONTEXT: For many students the first year of any university course is a stressful period. To be successful, students need to be motivated and academically prepared but also able to adapt to the university environment. This study aimed to identify the challenges students face and their attitudes towards vet school during this transition period.

METHODS: Semi-structured interviews and questionnaires were used to collect the student perception of first year at vet school comparing school leavers with graduate and preliminary year students.

RESULTS: First year students are generally very motivated with high expectations of the course. First impressions are generally positive although some graduate and preliminary year students do not value Fresher's week and the introductory weeks. Preparation varied between the three groups of students with the school leavers feeling least prepared academically for the vet course. The major causes of stress during the year were the workload and assessments, students were less concerned about financial and personal issues. With the exception of the personal tutor, university support systems were not rated highly or well utilised by the students; family and friends are the most important form of support for most students.

CONCLUSIONS: Most students find the transition to vet school easier than they had expected and the course generally meets their high expectations. Workload and academic failure are a major cause of stress, yet the university support systems in place are not generally perceived as helpful in overcoming the challenges students face.

13. Student Perception of 1st Year at the School of Veterinary Medicine and Science - Comparing school leavers, graduate students and year 0 access course

S. Töttemeyer and K. Cobb. School of Veterinary Medicine and Science, University of Nottingham, UK.

Similar to medical students, vet students have added pressures compared to other students due to the course design, content and accreditation requirements. The first year at university is the most critical in shaping persistence decisions and plays a formative role in influencing student attitudes and approaches to learning.

Semi-structured interviews and questionnaires have been used to collect the student perception of first year at vet school comparing school leavers with graduate and preliminary access year students.

Overall the 1st year experience of all students is very similar, it was hard work but also enjoyable. The workload can be difficult to deal with. Graduate and preliminary year students appear to settle quickly into a work routine, while the school leavers needed a while to find a routine that suits them. In addition, more graduate and preliminary students agreed that they have little difficulties understanding the course material.

Compared to vet students in the US our students' responses are very similar that they have learned a lot and were satisfied with their progress. In contrast, more of our students appear to be overwhelmed by their workload, compared to the survey results from the US. This suggests that student support with the workload and assessment requirements could still be improved. In contrast, a higher proportion of our students agree that teaching has been clear and understandable. Overall these results suggest that the teaching approach is clearly successful giving our students a positive first year experience similar to that of students in the US.

14. Preparing for the feminisation of the UK profession: a case for revising veterinary curricula?

L. Treanor, C. Henry and S. Baillie. The Royal Veterinary College, University of London, UK.

In the UK, women now outnumber men as veterinarians in practice (RCVS, 2006), yet they remain much less likely to establish or own practices (RCVS, 2006). While there is a dearth of empirical research in this area, previous evidence suggests women veterinarians rate their financial, business and management skills lower than their male counterparts (Brown and Silverman, 1999) and women are also more likely to limit their career aspirations because they believe they lack the necessary capabilities (Bandura, 1992). This has been found to impact upon entrepreneurial intentions (Wilson, Kickul and Marlino, 2007) and could partly explain women's under-representation in practice ownership and management. Seventy-nine percent of UK veterinary students were female in 2008 (RCVS, 2008) and, unless female graduates are confident they possess the requisite knowledge and skills, the move away from partnership practice towards corporate practice in the UK may escalate.

Financial, business and management skills, as well as self-efficacy development, are lacking from veterinary curricula despite their growing importance in veterinary practice (Ilgen, 2002; Kogan et al., 2005). Given that self-efficacy and skills can be positively influenced by interventions (Hollenbeck & Hall, 2004), and that targeted education has been shown to make a difference in other sectors (Wilson et al., 2007), it seems logical to assume that structured intervention in the veterinary curricula could have a significant positive impact upon women's entrepreneurial self-efficacy and business leadership potential. Through a thorough review of extant literature, this paper considers the case for revising veterinary curricula and presents a proposal for further research.

DAY 2: July 14th 9.30 – 11.00 (parallel session)

INTERACTIVE POSTER SESSION II: e-learning and veterinary education

N.B. Posters are organised in presentation order. The format is 2 minutes to present & 2 minutes for questions

15. Engaging young people in science: idiscover and 'Building the Body' haptic workshops

S. Baillie¹, N. Forrest¹, T. Kinnison¹, J. Bullock¹, J. Cannon², C. Wheeler-Jones³ and J. Parry². ¹LIVE Centre, ²Widening Participation, ³Lifestyle Research Group. The Royal Veterinary College, University of London, UK.

INTRODUCTION: Encouraging young people to consider STEM subjects as career choices is a major challenge in the UK. Veterinary schools are ideally placed to provide interesting and hands-on scientific experiences. The Royal Veterinary College (RVC) is using haptic technology to provide workshops for young people at Key Stage 3 (12 -14 year olds) under schemes supported by NESTA (idiscover) and the Wellcome Trust ('Building the Body').

METHODS: The students gain experience with simulators used in the RVC's curriculum. These include the Haptic Cow (palpating reproductive organs), the Haptic Horse (diagnosing colic) and the Core Skills Trainer games (practicing dexterity and perceptual skills). Students then use a prototyping tool to create their own haptic simulations. Finally, in small groups they use the knowledge gained throughout the day to propose innovative uses of the technology and present their suggestions.

RESULTS: Workshops have been delivered for several schools in London. The students have suggested many interesting innovations including using haptic simulations to make maths more exciting, to feel inside the human body, to perform surgery remotely and to touch rocks from around our galaxy!

CONCLUSIONS: Haptics has proved a great way to engage young people in science. Further events are planned with simulation helping to showcase and promote understanding of biomedical science research. We also aim to implement some of the ideas to demonstrate to young people that having innovative ideas can lead to tangible results. Ongoing work is investigating ways of measuring and sustaining the impact of the workshops.

16. Implementation of a comprehensive, integrated Virtual Learning Environment for the Bachelor of Veterinary Medicine and Surgery (BVMS) undergraduate programme

F. Dowell and U. Barrett. School of Veterinary Medicine, University of Glasgow.

BACKGROUND: A recent pilot project undertaken by the Veterinary Pharmacology course team at the University of Glasgow resulted in the restructuring of the Veterinary Pharmacology Moodle site to facilitate enquiry-led student learning. The outcomes of this project highlighted the vastly underused capabilities of Moodle.

SUMMARY OF WORK: This is a 2-year project to restructure the VLE (Moodle) to reflect changes in the BVMS Programme in Veterinary Medicine curriculum which is taught with a vertically integrated approach. There is a particular emphasis on integrating clinical and professional skills from Year 1 to Year 5.

SUMMARY OF RESULTS: Results will be available of the Stakeholder consultation (student & staff questionnaires, focus groups), the requirements analysis preceding implementation of the new Moodle structure and of the staff training (project groups) put in place in order to create a sense of ownership of the technology involved for future incremental use, addressing RCVS Day-One competencies etc.

CONCLUSIONS: The successful outcomes of this project will be that we have motivated and supported student learning; promoted student engagement with learning; used new and developing technologies to enhance the student learning experience and enhanced the capabilities of our academic staff to utilise this technology.

TAKE-HOME MESSAGE: Despite bad press VLEs are not dead. If they are tailored to the subject matter, reflecting diverse learning styles and varied teaching approaches with stakeholder needs as a first priority they can facilitate a highly successful learning environment for the student (including self-directed, enquiry-led and peer learning, improved feedback, addressing issues such as accessibility, student diversity) and an effective teaching environment for staff.

17. The accredited clinical teaching open resources (ACTOR) project

G. Brown and N. Purcell. Subject Centre for Medicine, Dentistry and Veterinary Medicine.

The ACTOR project represents a consortium of five partners (Hull York Medical School, Peninsula College of Medicine and Dentistry, Newcastle University, University of Bristol and University of Cambridge), delivering postgraduate certificate, diploma and masters level programmes in clinical (including veterinary, allied health professions, dental, medical and nursing) education (PGCertClinEd). These programmes are similar to PGCertHE and support the academic development of clinicians and others involved in teaching students of human and animal healthcare.

Led by MEDEV, the project aims to accelerate uptake of OER approaches, such as good practice in use of Creative Commons (CC) licences; consenting human involvement in educational resources (ER); and clearing reuse of third-party upstream rights in ER by PGCertClinEd programme leaders. A community of practice will be created among those who teach healthcare education leaders of the future who are themselves teaching others. It is hoped that this will exemplify and cascade best practice in sharing resources.

By ensuring institutional policies and practice are clearly in place, the project will release a substantial amount of ER relevant to clinical education programmes using the most open CC licenses possible. The project also aims to explore strategies for the dissemination and utilisation of the OER resources in practice contexts and to foster an effective and sustainable community of practice.

18. The use of a blackboard wiki as a tool for teaching evidence-based veterinary medicine

M. Steele, N.P. Crabb and L.J. Moore. Bristol Veterinary School, University of Bristol.

INTRODUCTION: Evidence-Based Veterinary Medicine (EBVM) is a growing area of interest to all veterinary practitioners. Therefore, university institutions have an increasing responsibility to teach undergraduates effective techniques in article appraisal. We used an e-learning environment to train final year students (n=117) in standardised EBVM techniques via a powerpoint™ presentation and an excel™ calculator. The students used an online Wiki tool to record a case chosen from their own experience in first opinion farm practice. They performed a database search relevant to a patient, intervention, comparison and outcome (PICO) approach, explained by Cockcroft and Holmes (2003). The students appraised the resulting articles and recorded this on the Wiki. The Wiki tool also allowed them to discuss their results with other groups online before attending case rounds with experienced clinicians.

CONCLUSIONS: The students found the EBVM Wiki Critically-Appraised-Topic creating exercise to be both interesting and relevant to their future careers. They understood the principles of PICO patient question formulation and applied this to a database search for articles relevant to their intervention plan. They were able to obtain EBVM-related statistical values and appraise articles for their reliability. From this, they could create a best-evidence answer to their case intervention and apply this in practice later in their rotation.

This project has great potential to the clinician in practice. If a database of peer-reviewed CATs was created, the clinician may be able to search this and quickly see a clinical bottom line to proposed interventions based on the best scientific evidence.

19. Development of virtual scenarios within the Veterinary Pharmacology and Therapeutics Course at Glasgow Vet School

F. J. Dowell and N. P. Evans. School of Veterinary Medicine, College of Medical, Veterinary and Life Sciences, University of Glasgow, UK.

Application of knowledge to realistic clinical scenarios stimulates a greater understanding of lecture material, encourages active learning and develops students abilities to source current factual information. Interactive virtual scenarios were developed to enable the students to: gain knowledge of the different drug classes and their uses; understand the range of methods of application of drugs in live animals; develop numeric skills associated with treatment protocols; gain a working knowledge of legislation relating to the use of veterinary medicines.

Eighteen weekly scenarios associated with recent lecture material were presented as short PowerPoint presentations, ending with a series of questions that required short written or numerical answers. Cases were designed to encourage use of various resources e.g. printed compendiums/formularies, NOAH/VMD websites etc to find required information. Students were given one-week to upload their answer through a VLE. Immediately after the submission deadline case issues and answers were discussed with the class. Scenarios were associated with variable pass marks depending on the complexity of the case. Submissions contributed 15% of the final course mark.

Feedback from student questionnaires and focus group meetings demonstrated that the virtual scenarios were very well received and resulted in greater engagement with course content and core pharmacological principles as well as practical and legal issues relating to drug use. The standard of achievement was as expected with open book assessment high, although a range of marks were awarded from 0-100%. Examples of the cases will be presented and the assessment process will be discussed.

20. Using Google sites for delivery of a 4-week elective module

J. Macdonald and C. Gray. University of Liverpool

Final year students are required to select a specialist area for study in a dedicated 4-week block. Traditionally, electives have been concentrated in on-site hospitals and practices, or have taken place "off-site". The first communication skills elective was run in 2005, and attracted one or two students per year. In 2011, following on from a successful on-line format for professional skills training at postgraduate level, it was decided to offer the elective (now incorporating a variety of professional skills) as an on-line course, with selected face-to-face sessions and other activities. The combination of online learning, participation in prospective student interviews, peer teaching and assessment, discussion board work, workshops and reflective diary entries resulted in measurable improvement in a range of professional skills and received very positive feedback from each of the 3 students involved. Due to limitations with the University's e-learning platform, the elective was run from a 'Google site', and each student also created a personal site for use as an online portfolio. This platform was ideal both for the purposes of delivery of course materials and group discussions, and assessment of work. Feedback was provided weekly, and the elective leaders decided on a final overall grade from the quality of the work produced and evaluation of "global" competences.

This method of delivering special study modules or electives could be utilised by anyone with reasonable IT skills. Google sites are "open source", thus removing cost as a prohibitive factor.

21. Adapting the 'EMS Driving Licence' for veterinary nursing students

T. Kinnison¹, H. Orpet¹, S. Pullen¹, J. McNae¹, C. Bell² and S. Baillie¹. ¹The Royal Veterinary College, University of London, UK. ² The Royal Dick School of Veterinary Studies, University of Edinburgh

INTRODUCTION: Training in placements (general practice) is an important part of learning for veterinary nursing students, consisting of approximately half of their studies. Student's preparation is often inadequate.

METHODS: The 'EMS Driving Licence', a Computer Aided Learning (CAL) program, which was designed to assist veterinary students with placement preparation, was adapted for veterinary nurses. Adaptations were based on consultations with nurses, nursing school staff and students. The CAL contains advice on preparation, working with people and professionalism and includes answers to students' 'frequently asked questions'. Three nurses in practice, four nurses at the Royal Veterinary College and five students provided feedback on the CAL.

RESULTS: Feedback from qualified nurses was positive, indicating the CAL was appropriate to students' needs and would be used with future students. Example quotes from nurses in practice: "This is fantastic, exactly what is needed." "The list of what to do when it's quiet was good; one of the biggest problems is finding jobs when it's quiet." "Information on nails, hair, uniform was very good, and needed to be said!" Students also appreciated the value of the CAL, one student said "I

wish we had something like this because I went in at the deep end, badly, I learnt all this stuff at the practice by trial and error.”

CONCLUSIONS: Qualified veterinary nurses and student nurses thought the CAL provided useful advice on preparation for placements.

TAKE HOME MESSAGE: Veterinary nursing students require assistance preparing for placements; a CAL has been developed and qualified veterinary nurses and students consider it to be beneficial.

22. ‘Action!’ research – what do students really want from video resources?

A. L. Roshier, N. Foster and M. A. Jones. School of Veterinary Medicine and Science, University of Nottingham UK.

BACKGROUND: Video technology/usage in medical education is a developing environment which studies have shown has pedagogical reasons for inclusion.

AIMS: A student-centred approach was used to review an online video resource (called ‘Moo Tube’) at the School of Veterinary Medicine and Science, University of Nottingham, UK. Feedback facilitated the development of guidelines for future video resources.

METHODS: Student feedback was collated, using a focus group in the format of the nominal group technique. 12 undergraduate students (3 from year-1, 4 from year-2 and 5 from year-3) participated. Groups were asked to identify the strengths and weaknesses of the video resources and suggest improvements. Video access before and after a practical examination was analysed to provide data on video usage and all responses were thematically analysed.

RESULTS: A number of strengths were highlighted and four overarching themes identified: (1) teaching enhancement, (2) accessibility, (3) technical quality and (4) video content. Video usage was seen to significantly increase ($P<0.05$) before an examination and significantly decrease ($P<0.05$) following the examination.

CONCLUSIONS: Students viewed video resources positively and provided valuable insights on what they believe make good resources. All groups highlighted the following as important issues: i) good sound quality, ii) accessibility, including location of videos within electronic libraries, and iii) video content. The study outcomes enabled guidelines to be produced for those developing video resources for veterinary students. Aspects of this may also be useful to those developing material in other areas of higher education.

23. A veterinary puzzle: how do examination type, gender, nationality and prior educational experiences piece together?

C. S. Rutland. School of Veterinary Medicine and Science, University of Nottingham, UK.

The students at the School of Veterinary Medicine and Science (SVMS), University of Nottingham encounter many varied assessment formats and the preliminary research presented here explored examination type (ONLINE, SPOT and VIVA), gender, nationality and whether or not the SVMS preliminary year had been undertaken. The grades (post-moderation) from the entire cohort (93 students) were obtained for the first year cardiorespiratory system module and statistical analysis was undertaken.

Students achieved the highest grades in the ONLINE exams, scoring significantly lower in SPOTs ($P=0.0001$) and then ($P=0.009$). Overseas students generally achieved lower grades than ‘home’ students in all three examination types but this was not statistically significant ($P>0.05$) even when language differences were analysed. The students who undertook the preliminary year generally received higher grades (ONLINE $P=0.03$, SPOT $P=0.04$, VIVA no significant differences) than those who entered directly into the degree programme.

When gender was considered, males generally achieved higher grades than the females. The largest separation was observed in the SPOTs (whole cohort $P=0.02$, non-prelims only $P=0.003$) except within the ‘preliminary’ group ($P>0.05$). Males also achieved higher grades in ONLINE exams (whole cohort $P=0.045$), whereas no significant differences were observed between the sexes in VIVA examinations ($P>0.05$ across all cohorts).

Further research is continuing to ascertain why these differences occur, if they are reflected in other cohorts and modules, and whether they persist throughout the degree. It is hoped that the results will facilitate with discussions regarding examination types and teaching methods within veterinary education.

24. Use of sectional anatomical specimens and MRIs in the development of interactive online e-learning tutorials

C. Moore, C. Fuller, S. Gaze and L. Gaze. Bristol Veterinary School, University of Bristol, UK.

Veterinary and medical students are currently taught anatomy at Bristol using prosected cadaveric material and potted specimens. This provides a solid framework for learning and understanding the positions of organs, muscles and blood supply relative to surrounding tissues, and their overall position within the body. This learning however, is usually dependant on the student having visual access to the entirety of an organ, muscle or vessel in order to orientate themselves and identify structures within a specimen. This may not adequately prepare them for identifying structures in a

clinical setting when there is a limited view and limited landmarks to use for identification; or in the case of accurately reading an MRI, a cross section of a specific area of the body.

The aim of this project therefore was to create a complete set of potted human and canine transverse sections to be incorporated with their corresponding MRIs into an interactive tutorial to be used either in conjunction with a practical class, or as an additional learning tool available online to reinforce material learned as part of the curriculum.

The usefulness of the material will be tested on first year veterinary students by way of administering spot tests before and after the participants have taken part in a practical. One group of students will have, in addition to normal cadaveric specimens and prosections, access to the transverse potted specimens and copies of the MRIs, and a second group will have access only to normal cadaveric specimens and prosections.

25. Development of an online interactive 3D canine bone set

C. Fuller¹, R. Bishop¹, D. Newbury¹, N. Latham¹ and A. Baumberg². ¹Centre for Comparative and Clinical Anatomy, University of Bristol, School of Veterinary Sciences, UK. ²Creative Dimension SoftwareLtd, Guildford, UK.

An online fully interactive 3D canine bone set has been produced by collaboration between the Centre for Comparative and Clinical Anatomy and Creative Dimension Software Ltd (CDSL) to support the teaching of anatomy. 3D models of canine bones were created from high quality detailed photographs of real specimens. There are many 3D online anatomy resources becoming available but this one uses highly realistic 3D models created from photographs rather than computer generated graphics and has the advantage of being fully interactive. A canine skeleton was prepared and each bone was mounted individually on a turntable. A conventional digital camera was used to capture 15 to 30 images of the bone from numerous viewpoints. The images were processed by CDSL using their 3DSOM Pro technology (www.3dsom.com) to create 3D models. The models are presented initially together as a complete skeleton, but by clicking on individual bones each one can be selected and examined in more detail. The bones can be rotated through 360° around multiple axes on the screen by dragging with the mouse. Other functions include zoom, optional hotspots and the transparency button which allows the viewer to observe the anatomical relationship between adjoining structures. The presentation is freely available at <http://www.real3danatomy.com> to anyone with a standard browser (Flash enabled). We are in the process of developing this resource further to add more detailed hotspots and overlays. We have also evaluated its use in undergraduate anatomy teaching and are currently in the process of analysing the results from that study.

26. Interactive labelling of anatomy images as a way to reinforce self directed learning and assist directed study.

O. López Albors¹, A. Rubio², R. Latorre¹, R. Macharia², M.D Ayala¹, G. Ramírez¹, F. Gil¹, J.M Vázquez¹ and N. Short². ¹Veterinary Anatomy, Dept. Anatomy and Comparative Pathology, Universidad of Murcia, Spain. ²The Royal Veterinary College, University of London, UK.

This paper describes how labelling of anatomy key landmarks and linked feed-back questions has been used to reinforce learning. Anatomy pictures including external surface landmarks, dissections and radiographs were used to set up a collection of “drag and drop” activities by using the software Dragster® 3.0 (Webducate). As this is part of a collaborative scheme between the Royal Veterinary College and the Veterinary Faculty of Murcia, the activities were simultaneously produced in English and Spanish. Free access to the activities was given to students of the first year of the Veterinary Degree. Activity usage by students was monitored by means of a hit counter, and at the end of term students fulfilled a questionnaire aimed at evaluating their learning experience. These materials were appreciated by students as an effective means to enhance self directed learning and revision of anatomy topics. The linked feedback questions were useful to focus attention on the most important topics and to help in exam preparation. Collaboration between two different educational institutions has provided an efficient process to simultaneously create the same content for students in different countries giving the product a wider student audience.

27. Cooperative bilingual development of computer assisted learning programs on anatomy

O. López Albors¹, G. Ramírez¹, A. Rubio², R. Macharia², C. Avella², F. Gil¹, R. Latorre¹, M.D Ayala¹ J.M Vázquez¹ and N. Short². ¹Veterinary Anatomy, Dept. Anatomy and Comparative Pathology, Universidad of Murcia, Spain. ²The Royal Veterinary College, University of London, UK.

This study summarizes the collaborative activities between the Veterinary Faculty of Murcia (Veterinary Anatomy Unit) and the Royal Veterinary College London (E-media and Anatomy units) to create bilingual e-learning resources to support anatomy teaching. Over a four year period faculty lecturers, technical e-media staff and students have been involved in sharing and translating a wide range of educational resources. This has included interactive programs based on electronic labeling of anatomical landmarks for digital images, videos of live anatomy, powerpoint teaching tools and potcasts. One output of this collaboration has been the partial translation of WikiVet (www.en.wikivet.net) into Spanish (http://es.wikivet.net/P%C3%A1gina_Principal) where much of this translated content has been hosted for open access by other veterinary schools. The experience has demonstrated the issues involved in creating multilingual versions of e-learning resources and the potential value in repurposing content through translation for a wider audience.

28. Developing the online professional 'Network Of Veterinary ICT in Education' (NOVICE)

S. Baillie¹, T. Kinnison¹, N. Forrest¹, V. Dale¹, J. Ehlers², E. Schaper², M. Koch², M. Mandoki³, T. Bartha³, E. Ciobotaru⁴, E. de Groot⁵, T. BB Boerboom⁵, J. de Gooijer⁵ and P. van Beukelen⁵. ¹The Royal Veterinary College, London, UK, ²Stiftung Tierärztliche Hochschule, Hannover, Germany, ³Szent István Egyetem, Budapest, Hungary, ⁴Facultatea De Medicina Veterinara, Bucharest, Romania, ⁵Faculty of Veterinary Medicine, Utrecht University, The Netherlands.

INTRODUCTION: Web 2.0 tools including wikis, blogs, discussion boards and social networks are increasingly used by healthcare professionals. NOVICE, an EU funded project led by five veterinary schools in The Netherlands, Germany, UK, Hungary and Romania, aims to develop a professional network that uses Web 2.0 tools to support informal, lifelong learning of educationalists, veterinarians and students.

METHODS: Focus groups and surveys were conducted with veterinarians and students in the five partner nations to determine potential benefits of, and barriers to, participation in an online network. Software options were compared in relation to their ability to support the project's aims to develop an online professional network and to conduct research into informal, lifelong learning.

RESULTS: Veterinarians and students reported similar barriers to participation in online communities including concerns about security and information reliability. Potential benefits of such communities included keeping up to date, easy and free access to information and expertise, and professional networking. Elgg, an open source social networking platform, was selected to support these needs. Within six months of its launch, the NOVICE network has nearly 700 members from over 30 countries, runs monthly virtual classrooms for ICT educationalists, and has special interest groups for veterinary educationalists (e.g. ViEW Professionalism), for veterinarians (e.g. Rinderpraxis) and for students (e.g. Tips and tricks for studying in Budapest).

CONCLUSIONS: Web 2.0 presents both opportunities and challenges to the veterinary profession. NOVICE has the potential to support veterinary informal, lifelong learning through online collaboration, discussion and exchange of information internationally.

DAY 2: July 14th 9.30 - 11.00 (parallel session)

INTERACTIVE POSTER SESSION III: Clinical skills and veterinary education

N.B. Posters are organised in presentation order. The format is 2 minutes to present & 2 minutes for questions

29. Clinical decision making in veterinary practice

S. Everitt. School of Veterinary Medicine and Science, University of Nottingham, UK.

Clinical decision making is an integral part of our professional work, however to date there has been little research into this important area of veterinary practice. This presentation will draw on research using video-cued interviews, which use recordings of real life consultations to explore the factors which veterinary surgeons consider influence their clinical decision making in practice. The research indicates that veterinary surgeons perceive there to be significant differences between clinical decision making as taught and as practiced.

Clinical decision making in practice is perceived to be an iterative and interactive process which is influenced by a range of factors other than the medical condition of the animal. These include the status of the animal, the expertise and resources of the client as well the context in which the decision making is taking place.

As has been shown in other fields experienced veterinary surgeons, when dealing with routine cases, are more likely to rely on rapid System 1 (pattern recognition) approaches to decision making reserving the more analytic System 2 approaches for complex cases or those which do not fit the pattern (Evans 2003, Croskerry 2009). These findings raise issues about the way that clinical decision making should be taught (Eva 2004).

30. Exceeding customer needs: training into the future

S Throup, A Curwen, N Woolfenden, P Alcock, O Atkinson, J Statham. XLVets FarmSkills, Carlisle House, Dalston, Carlisle

A variety of knowledge transfer events are on offer to farmers. There is a need for a consistent and credible training product which answers the real business needs voiced by farmers and not perceived by interest groups, which is clearly communicated to and understood by all parties. XLVets launched its FarmSkills training programme in September 2009, supported by LandSkills (Lantra) funding in many areas, to answer these challenges and to raise the standard of training delivery from its members. In order to deliver effective training, FarmSkills supplies: Consistency of content and delivery; Credibility of trainer; Competence in the trainee. The poster presents the methods used and the results achieved.

31. Cluster analysis: a tool for discovery in veterinary education

C. Roder. The Royal Veterinary College, University of London, UK.

BACKGROUND: Cluster analysis is a multivariate technique for searching for natural groups or clusters in data sets, based on a set of user selected characteristics. These natural groupings can then be profiled for demographic similarities and differences. Originally used in business as a method of market segmentation for target marketing, the benefits of this method are becoming more widely recognised in both the physical and social sciences.

PURPOSE: As well as providing an introduction to cluster analysis as a data analysis technique, this poster aims to present the advantages and disadvantages of cluster analysis as a tool for veterinary educational research. Illustrated examples will be provided from the author's experiences of using cluster analysis in a recent study on views of professionalism.

32. Doing Dissections Differently: a structured, peer assisted learning approach to maximising learning in dissections

E. Hall, R. Davis, R. Weller, S. Powney, B. Yamagishi and S. Williams. The Royal Veterinary College, University of London, UK.

We identified "challenges" to effective teaching and learning in dissection classes: underuse of available resources; difficulty identifying clinically relevant anatomy; difficulty coping with a high volume of knowledge in a short session; and varying commitment and preparation by individual members of the dissection team. Our aim was to implement a reciprocal peer-assisted learning scheme, Doing Dissections Differently (DDD), to maximise learning outcomes and communication, and promote team work and respect.

193 Year 2 BVetMed students in their usual dissection groups were randomly allocated to each of four roles: anatomist, clinician, radiologist, and learning resources manager. Students attended a preparatory workshop outlining the required skills for effective execution of their role. Students were asked to carry out their roles throughout 5 consecutive locomotor dissection classes. We evaluated student attitudes to dissection class pre and post DDD by questionnaire, with 146 respondents. A significant ($p < 0.05$) improvement in a number of areas was found after DDD: increased perceived value of dissections as an anatomy learning aid; improved appreciation of clinical relevance of anatomy; increased use of imaging resources during dissections; longer preparation time and increased use of resources before dissections. 45% of students felt at least one peer did not contribute usefully to the group during dissections, but no improvement was seen in this measure after DDD. In conclusion, most groups actively engaged with DDD, with dissections valued and utilised more effectively. However the scheme highlighted that not all students contribute to group tasks, and addressing teamwork in our students remains a challenge.

33. Clinical relevance and directed group learning, student perceptions of facilitated and non-facilitated small group teaching

R. Tarlinton. School of Veterinary Medicine and Science, University of Nottingham.

Student-centered learning is of growing importance within Higher Education and increasingly includes student-led as well as facilitated small group learning environments. The School of Veterinary Medicine and Science has adopted both of these approaches, with students undertaking facilitated clinical relevance (CR) and non-facilitated directed group learning (DGL) sessions.

Within this project, students were asked to complete questionnaires throughout the first module of the course. In addition, their facilitators completed a questionnaire about the CR sessions to assess student performance.

Students overwhelmingly rate their training and enjoyment of CR Sessions as good or very good (90%) whereas they were more ambivalent about DGL sessions (with only 46-62% rating these as good or very good).

Asked for an overall impression of their group's performance, 69% of students felt that their group had improved within CR sessions through the module, but only 36% felt the same about DGL sessions with 30% stating that their group's performances deteriorated through the module. Students mentioned difficulties in maintaining motivation/focus within DGL sessions as a contributing factor and it was apparent that the vast majority of students routinely completed tasks outside of their DGL group.

From this study it seems clear that students value and enjoy CR sessions considerably more than DGL sessions. Future studies could investigate whether these problems with DGL sessions are rooted within differences in student-training, or differences in subject matter or the format of the sessions.

34. Using cognitive task analysis to unravel expert technique and inform teaching practices

S. Baillie¹, T. Kinnison¹, N. Low-Beer², F. Bello², R. Kneebone², J. Higham². ¹The Royal Veterinary College, University of London, UK. ²Imperial College, London, UK.

INTRODUCTION: Internal examinations form a crucial part of many clinical procedures in human and veterinary medicine. However, there are unique challenges associated with learning unsighted examinations. The trainee cannot observe the

clinician's actions and the clinician cannot follow the trainee's hand or finger movements to give instruction or feedback. Furthermore, experts often have difficulty describing their technique verbally as it has become automated.

METHODS: Cognitive Task Analysis (CTA) was used to 'unravel' expert technique for bovine and human internal examinations. Three veterinarians performed rectal palpation on live cows and were recorded describing the steps undertaken to find the reproductive tract as well as their decision making process. Twenty doctors performed digital rectal examinations (DRE) on a bench-top male DRE simulator to examine the anus, rectum and prostate, and were recorded and videoed. The transcripts and videos were analysed to identify the procedural steps involved.

RESULTS: The recordings produced a list of steps and decision making points. For example, to find the uterus in the cow 29 steps were defined and these were incorporated into the teaching protocol for the Haptic Cow simulator. For human DRE, a total of 49 procedural steps were identified which included communication, physical and sensory processes. Twelve critical decision making points were highlighted.

CONCLUSIONS: Cognitive Task Analysis can be used to deconstruct experts' automated knowledge and produce detailed step-by-step guidelines for trainees. Many other clinical examinations lend themselves to CTA and the authors recommend more extensive use of the technique in both veterinary and medical training.

35. Introducing clinical skills teaching into the RVC curriculum: how is it done?

N. Coombes, I. Vincent and A. Langridge. The Royal Veterinary College, University of London, UK.

The RVC opened the first UK veterinary Clinical Skills Centre (CSC) in 2004. Although CSCs were widespread in medical education, a dedicated and full staffed centre was a new concept in veterinary medicine.

The CSC is a 'library of skills' instead of books, available to any RVC student, vet, nurse or scientist. Teaching is delivered by a team of 3 dedicated Clinical Skills tutors using simple, often cheap, yet innovative models developed by staff. The CSC tutors aim to de-mystify skills, take a student-centred approach and support skills acquisition in a non-threatening, simulated clinical environment. Teaching includes not only clinical skills but also communication and animal handling. The CSC tutors are also involved in writing, setting up and running OSCE's.

For example in third year vet students are introduced to 'Day One Skills'. Teaching consists of ten 1 hour sessions, five with new skills, interspersed with five refresher sessions. During each hour, three 'new' skills are introduced within a 'theme' – lab, anaesthesia, theatre, radiography. During 'refresher' sessions students practice the skill again but with additional challenges. For example, in the first session students learn a simple interrupted square knot, in the refresher session students repeat the skill and then practice other suture patterns or apply the skill in 'context' e.g. on a model horse's leg.

Self-directed learning is encouraged with the students expected to practice away from the centre and drop-in during their free time. This is supported by written skills sheets for each station and videos on Blackboard.

36. The forgotten pet? Addressing the need for more veterinary teaching about rabbits

A. Langridge and C. Seymour. The Royal Veterinary College, University of London, UK.

Rabbits are now the third most popular pet in the UK with an increasing number of adult owners. However, the amount of time devoted to educating undergraduate veterinary and veterinary nursing students about rabbit care remains minimal.

Discussions with students have indicated that they recognised the deficiency and were keen to learn more. In response an initiative was led by a veterinary nurse (AL) with a special interest in rabbits to deliver extra-curricular teaching in the form of lectures and practical sessions. Topics covered included basic animal handling e.g. lifting a rabbit out of a basket, the role of nutrition and husbandry in the prevention of disease, anaesthesia and critical care nursing.

Additionally, a peer teaching session was delivered on handling rabbits, hamsters, guinea pigs, rats and chinchillas. The session was scheduled for two hours but there was an overwhelming response and it lasted for five very busy hours. The owners of the animals acted as the peer tutors and were supported by a facilitator (AL) who also provided instruction as required. A range of practical examination skills were taught such as molar examination and abdominal palpation and the facilitator also fielded questions about all aspects of rabbit care both domestic and clinical. Feedback indicated that the event was a great success. Students have asked for similar sessions which are currently being organised for June 2011. It is anticipated that these practicals will become an ongoing event and will be integrated into the curriculum in the future.

37. Use of an articulating manikin lamb and ewe simulator to enhance and supplement teaching of ovine obstetrics

I. Vincent and J. Thompson. The Royal Veterinary College, University of London, UK.

One way of addressing today's ever-increasing numbers of undergraduate students is to create simulated learning scenarios. These provide a safe, non-critical environment where students can practise certain skills repeatedly until they feel confident. The RVC was the first veterinary school to set up a purpose built Clinical Skills Centre in 2004 where mainly Day 1 skills could be practised using simulation as a learning tool.

However, from as early as the 1980s onwards, RVC students have been given practical instruction on lambing using two ewe simulators with cadaver lambs. The original simulators were made by the now-defunct Meat and Livestock Commission to train veterinary students and farmers. Since then one of the authors (JT) has made a number of further simulators similar to the originals. The basic design is a domestic water tank 'ewe', with a 'vaginal entrance' and a 'birth canal/uterus' made from strong polythene tubing. The polythene is fed through a fused pelvis (boiled out skeleton) fixed to the centre of the tank. This tubing widens to form the 'uterus' which can hold up to two cadaver lambs.

Sourcing cadaver lambs that are suitable has always been an issue: they must be as near newborn as possible (to fit through the 'birth canal') and cause of death cannot be due to disease, but due to weakness or misadventure. The authors sought to address this by commissioning the manufacture of a fully-articulating manikin lamb. This prototype is presently being tested for its suitability and robustness.

38. Enhancing clinical learning in the workplace: outcomes of phase I

K. Magnier¹, R. Wang², V. H. M. Dale¹, L. Mossop³, R. Hammond³, R. Murphy², S. Freeman³ and M. J. Peard¹. ¹The Royal Veterinary College, University of London, UK. ²School of Education, University of Nottingham, UK. ³School of Veterinary Medicine and Science, University of Nottingham, UK.

The 'Enhancing Clinical Learning in the Workplace' project (www.eclw.ac.uk) is collaboration between the Royal Veterinary College (RVC) and the Schools of Veterinary Medicine and Science (SVMS) and Education (SoE) at the University of Nottingham. The project aims to establish a critical understanding of the clinical workplace from the perspectives of students and placement providers, in order to maximise the student learning experience.

Phase I of the project began in May 2010 using a mixed methods approach that included semi-structured interviews and observations. Interviews with students focused on their expectations and experiences of work placements. Interviews with placement providers focused on their expectations of students, impressions of the workplace as a learning environment and their role in facilitating student learning.

Initial perceptions from the data revealed that students and placement providers highly value workplace learning as an opportunity for students to practice their clinical and communication skills. Although students initially felt underprepared and did not know what to expect from a placement in a new species area, they described an increased level of confidence in terms of their abilities which included working with clinical staff as fellow professionals. This is in direct contrast to the placement providers who had specific expectations of the students to actively participate, engage with all members of staff and demonstrate professionalism at entry to the workplace, and considered themselves as mentors in facilitating the student's transition into independent, responsible veterinary surgeons.

Acknowledgements: This project was made possible with funding from the Higher Education Academy's National Teaching Fellowship Scheme.

39. Enhancing clinical learning in the workplace: outcomes of phase II

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Phase II of the project began in December 2010, focussing on the role of the clinical teacher. An ethnographic approach was undertaken for data collection that included observations of teaching in the workplace, interviews with teachers, and one teacher's reflective audio logs. This methodology encouraged the clinical teachers to monitor their teaching by considering successful and less successful teaching interventions on a daily basis. This enabled them to quickly adapt or adopt different approaches and techniques to make it possible for the students to learn most effectively.

Results indicated that clinical teachers at both institutions employed similar teaching strategies to guide students learning. These included questioning, commentating, explaining, demonstrating, supporting, and intervening. The teaching strategies in the clinics occurred on ward rounds, teaching seminars, journal clubs, formative assessments and in surgery. A number of challenges emerged from the reflections about teaching in the workplace which included the balancing of clinical and teaching responsibilities, varying case loads and time restraints.

Further data collection and analysis will continue with a view to establishing recommendations for best practice.

40. Is it worth the pain? A review of delivery experience and student feedback on a new, compulsory numeracy module

H. Dobbs. School of Veterinary Medicine and Science, University of Nottingham, UK.

"We have a numeracy problem in this country – we are a nation quite happy to admit to 'being bad at maths': we see people almost wearing it as a badge of honour, in a way they would never admit to saying they couldn't read or write."

[Dame Mary Marsh DBE: Numeracy Counts – NIACE Committee of Inquiry on Adult Numeracy Learning – Final Report, Feb 2011]

Educators and employers alike complain about poor numeracy skills in their students /employees, and have been doing so for quite a while. Many universities have implemented numeracy support programs and the government has so little faith in their own curriculum that would-be teachers (all with GCSE maths) must pass a numeracy test before they can qualify.

In response to concerns about numeracy in new entrants to the School of Veterinary Medicine and Science, a compulsory numeracy module was introduced into the Preliminary Year for 2010.

In this poster I will give an overview of the content and philosophy of the Preliminary Year Numeracy module, present anecdotes from student feedback and share experiences gained through its delivery. By considering attainment in formative assessments and reflecting back on the year, I shall rhetorically ask: "is it worth the pain?"

41. Does gender bias short answer question answering?

N. Foster. School of Veterinary Medicine and Science, University of Nottingham, UK.

INTRODUCTION: This study investigated whether or not different short answer question styles were gender biased as reported in some studies. Two undergraduate student cohorts were analysed across 4 different modules over a 3 year period (804 questions in total).

RESULTS: The results of the study show that there was no difference in the performance of females and males in any of the question types analysed across any module or year. When the overall average performance of students (males plus females) in different question types were compared with performance in standard multiple choice questions (MCQs), performance levels were increased when students were asked to answer multiple choice questions which contained an image-based prop (IMCQ) such as a photograph, X-ray image or diagram. In contrast students performed consistently lower when answering assertion/reason questions (ARQs) and this could not be explained by the demographic make-up of the two cohorts analysed. When comparing standard MCQs with MCQs which contained a true/false question stem the data could not determine any specific trend.

CONCLUSION: In contrast to some recent studies, this study suggests that the style of short answer question does not bias against one gender or another but that, overall, students do perform differently according to question type and, in particular, less well when ARQs are used in examinations.

42. Staff and student perception of feedback in the first four years of veterinary medicine at Nottingham

M. A. Jones, K. Cobb and S. Töttemeyer. School of Veterinary Medicine and Science, University of Nottingham.

Feedback and formative teaching are often so tightly linked to the process of assessment that they are viewed as mutually inclusive. It can be argued that if this view is held by both staff and students it will limit the potential for informal communication and feedback within courses. It is the combination of both formalised and informal feedback which allows students to take control of their own learning. We set out to understand how feedback is understood and perceived within the BVMedSci. The poster will present a summary of data from questionnaires, nominal group analysis and interviews on the perception and quality of feedback quality within the first four years of the course and from staff. The data show that the perception of feedback varied both between year groups and between staff and students. Common themes identified included, timing and quality of feedback and providing a positive challenge to students. These themes correlated to those already published. Interestingly sessions with a low student staff ratio (i.e. practicals and small group sessions) which staff expect to be good for communication and discussion are not necessarily associated with feedback by students. The data suggest that some negative comments in surveys with regards to the feedback in courses may be due to a lack of recognition of feedback. The understanding of the role of feedback was variable between students suggesting that the management of the transition to self-learning and use of feedback received could be improved.

WORKSHOPS

Delegates may select one workshop for each day. Each workshop lasts for 90 minutes

DAY 1: 13th July 16.00 – 17.30

W1. Creating virtual patients

Z. Belshaw. School of Veterinary Medicine and Science, University of Nottingham.

Virtual patients (VPs) have been used by medical educators for over 30 years, but are still in their infancy in veterinary medicine. A virtual patient (VP) is an interactive computer based case which aims to simulate the process of working through a real case from history through to treatment and outcome; there is evidence that the learning outcomes can be the same as those generated by seeing a real case. There are many different specifically designed computer packages allowing generation of different types of user experience. Nottingham and the RVC have been trialling a free software package, Xerte, to create VPs for use in final year teaching. The aim is ultimately to create a virtual hospital containing cases with the majority of common presentations to general practice, both to be incorporated into rotations and to supplement independent learning.

This workshop will explore some of the problems associated with creating VPs, and share lessons learnt both from our own experience and those of the medics who have created in excess of 250,000 VPs. There will also be a separate Xerte workshop for those wishing to have a go at building their own VP using this software.

W2. Practical skills for veterinary educators: learning models and teaching aids

N. Booth. School of Veterinary Medicine and Science, University of Nottingham.

Graduating veterinary surgeons are expected to be omnicompetent in clinical and psychomotor skills across species and for work in both clinical and non-clinical work settings. The performance of psychomotor skills in undergraduate students is fundamental for the achievement of the Royal College of Veterinary Surgeons 'day-one' competencies. A number of models exist which describe the acquisition of psychomotor skills and what is clear is that "see one, do one" is not the most effective way of teaching complex procedures (Grantcharov & Reznick 2008). Application of these teaching models across the undergraduate curriculum aids the student learning experience and ultimately their performance. In addition educators are seeking new and novel teaching aids from low fidelity bench suturing models through to haptic technology. Whilst the variety of these aids tends to be more limited in veterinary education than in our medical counterparts, ingenuity is often the key.

This workshop will outline the key psychomotor skill acquisition models and provide opportunities for delegates to practise on each other using 'bench top models' they have brought with them. The second half of the workshop will provide an opportunity for delegates to showcase teaching aids they have developed to share ideas across veterinary schools.

W3. Supporting today and tomorrow's learners: innovative ideas for student learning support

V. Dale¹, K. Whittlestone¹, J Kydd² and S Totemeyer². ¹The Royal Veterinary College, University of London, UK. ²School of Veterinary Medicine and Science, University of Nottingham

The increasing emphasis on self-directed learning in the health professions, in order to produce effective lifelong learners means that today's veterinary students can no longer rely solely on the study skills developed at secondary school, such as rote memorisation of facts or basic concepts. Students are required to apply knowledge, and analyse and synthesise information, in order to solve complex clinical problems. The increasing recognition of the importance of facilitating 'deep' learning is mirrored in the 'new' curricula established in recent years at a number of veterinary schools, including those in London and Nottingham.

These changes have important implications for the way that learners are supported throughout their professional training. Anecdotally, it has been observed that a number of students struggle by the time they reach the third year of the veterinary course, which has a greater clinical focus, when they realise that tried and tested methods of learning and revision – such as re-writing lecture notes – no longer work for them. It is at this point that many students – especially those with specific learning difficulties such as dyslexia – approach learning support officers and tutors for help and advice. It can be difficult at this stage to encourage students to relinquish their study habits in favour of alternative strategies that promote active learning. International students can also present issues regarding support.

The purpose of this workshop will be to encourage participants to think about the learning needs of their own students, to reflect on the nature and scope of learning support currently being provided and to consider some alternative strategies for supporting successful, self-directed learning from the outset of their professional training.

W4. Integrating WikiVet into teaching and learning

N Short, B Stanikova, C Trace. WikiVet Team, c/o eMedia Unit, Royal Veterinary College, London, UK.

WikiVet (www.wikivet.net) is a collaborative initiative to develop a free online veterinary teaching and learning resource. The site provides extensive content relevant to the international veterinary curriculum. Access is restricted to the veterinary profession to maintain the highest educational quality and standards.

WikiVet already has over 10,000 registered veterinary users. It is now accessed by veterinarians, lecturers and students from 195 veterinary schools in 68 countries. The site was originally developed in English but is now being translated into Spanish.

WikiVet content is largely available under creative commons licenses, meaning it can be incorporated into lectures and teaching material. It features over 4000 pages of content currently, and has many learning resources that complement this core material. Some of these resources include flashcards, MCQ-style quizzes, powerpoint tutorials, videos and interactive drag and drop exercises.

This workshop will explore ways that Vet schools can incorporate WikiVet into their teaching, and ways that individual students or graduates can use WikiVet as a complement to their learning. The workshop will cover:

- History of WikiVet
- Collaborative approach
- Structure of site
- Showcase of features
- Creative commons licensing
- Ways of incorporating your content
- Other ways of becoming involved

This workshop is a must for any schools considering utilising this resource more in the future. Members of the WikiVet team will be on hand to discuss any aspects you wish to elaborate on.

W5. Numeracy: have our students got what it takes?

J. Daly, H. Dobbs, R. Flynn, A. Mostyn. School of Veterinary Medicine and Science, University of Nottingham.

Over recent years, concerns have increasingly been voiced about the poor numeracy skills of the younger generation. In this workshop, we propose to engender discussion in three interactive sessions. In the first, we will ask whether there is a genuine numeracy issue amongst veterinary school entrants or whether this is a matter of perception amongst staff and practitioners. If we think or find that the numeracy skills of our students are not adequate, what is the nature of the problem? It may be that our students suffer from mathematics anxiety or they may be ill-prepared by the secondary school system. In the second session, we will share current practice regarding teaching of numeracy skills. Are the specific numeracy skills required of a veterinary surgeon practitioner or researcher taught, and how, or do we expect these skills to be acquired as a matter of course? Are we agreed on what numeracy skills our graduates should possess, and does this reflect the expectations of employers? Finally, we will consider what innovative means are available to incorporate numeracy teaching into the curriculum, for example multimedia interactive e-learning resources, some of which may already be in place in veterinary schools or elsewhere.

DAY 2: July 14th 11.30 – 13.00

W6. Graduate attributes: views from the coal-face

S.M. Rhind¹, S. Baillie². ¹The Royal Dick School of Veterinary Studies, Edinburgh, ² Royal Veterinary College, London, UK.

A survey was distributed to final year students and recent graduates from three UK veterinary schools (Edinburgh, Glasgow and London) and respondents were asked to rate 42 individual attributes on a 5 point Likert scale for their importance in easing the transition into practice. Focus groups and interviews were conducted to explore the quantitative results further. Findings indicated that there was a high level of agreement between the cohorts with communication skills, problem solving and decision making skills, recognition of own limitations and the ability to cope with pressure all unanimously rated as important or very important. Business acumen, knowledge of veterinary practice management and research skills were the 3 attributes ranked at the bottom of the list. Nine attributes were ranked significantly differently ($p < 0.05$) by the two cohorts.

During the workshop the project results will be presented for discussion. Small group activities will focus on the major themes that emerged from the project including practical skills and EMS, communication skills and the 3 bottom attributes (business acumen, practice management and research skills): Should we bother with these *as the curriculum is already overcrowded*? Finally we will discuss how to translate the findings into practical advice for curriculum development teams.

W7. Building interactive learning objects using Xerte online toolkits

C. Trace. Royal Veterinary College, University of London. In association with the School of Veterinary Medicine and Science, University of Nottingham.

Xerte online toolkits have been developed at Nottingham University to enable the creation of interactive learning objects. These learning objects are quick and simple to create, utilising an intuitive creation menu. Learning objects can incorporate a wide range of interactions, including drag and drop labelling, hot-spot exploration, MCQs and randomised quizzes. It is also possible to incorporate a range of media, such as you-tube videos and audio recordings.

Xerte online toolkits have been used by Nottingham Veterinary School to create a range of learning objects, some of which will be showcased at the workshop. Collaboration between eLearning technologists and subject matter experts has been made possible by the accessibility of Xerte.

Xerte is open-source, meaning it can be used by anybody. The finished, published learning objects can be accessed via a specific URL which can be incorporated in a virtual learning environment. Access to these learning objects can be tailored to suit the educator's needs.

Participants of this workshop will receive training in how to create learning objects using Xerte, then have the opportunity to create their own simple learning objects and receive feedback from peers.

W8. A new perspective on veterinary education

C. Whipp. Paradigm Shift Coaching & Consultancy, Soham, UK

As we move further into the 21st century, Veterinary Education faces an increasingly complex array of challenges and the traditional scientific "problem-solving" approaches that we have been trained in struggle to cope with both the speed and uncertainty of the changes involved.

BEVME – A Dialogue is a new transdisciplinary community of practice that seeks to explore veterinary education from a fresh perspective.

With a little over 2000 GP vets/practices on its database so far it will shortly be inviting University staff, corporate practices, veterinary organisations, institutions and CPD providers to come together for positive non-partisan dialogues to look for and implement solutions for the future.

The workshop will explore systemic perspectives on change in the veterinary educational domain and whether they may open opportunities blocked by traditional problem-solving approaches. BEVME will be used as a practical example of one such approach and constructive dialogue encouraged to identify opportunities for the future.

W9. Enhancing clinical learning in the workplace

K. Magnier, R. Wang, V. Dale, R. Hammond The Royal Veterinary College, University of London, UK and School of Veterinary Medicine and Science, University of Nottingham.

Learning in the workplace is highly valued by the veterinary profession as an opportunity for undergraduate students to apply knowledge and develop clinical skills in what is generally regarded as a safe, authentic environment. The Enhancing Clinical Learning in the Workplace (ECLW) project has sought to gain a critical understanding of clinical workplace learning from the perspectives of students and placement providers, with a view to establishing and disseminating best practice. The project is collaboration between the Royal Veterinary College (RVC) in London and the Schools of Veterinary Medicine and Science (SVMS) and Education, University of Nottingham.

This workshop will include a number of discursive activities to encourage delegates to consider the nature of clinical workplace learning within their own institutions and affiliated practices. In particular, delegates will be expected to discuss their experiences and ideas about students' preparedness for – and expectations of – the clinical workplace, the strategies undertaken by clinical staff to promote effective learning, the nature of learning in the workplace, and finally, how workplace learning might be ideally assessed. In between the activities, members of the ECLW team will give short presentations on the results from the project, to facilitate further reflection on this very important topic.

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